

Vol. XV.

January, 1913.

No. 1

THE TECHNOLOGY REVIEW

RELATING TO THE MASSA-
CHUSETTS INSTITUTE
OF TECHNOLOGY



PUBLISHED AT
491 BOYLSTON STREET BOSTON BY THE
ALUMNI ASSOCIATION

technology review

Published by MIT

This PDF is for your personal, non-commercial use only.

Distribution and use of this material are governed by copyright law.

For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Boston, Mass.

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY aims to give thorough instruction in *Civil, Mechanical, Chemical, Mining, Electrical, and Sanitary Engineering; in Chemistry, Electrochemistry, Architecture, Physics, Biology and Public Health, Geology, and Naval Architecture.*

To be admitted to the Institute, the applicant must have attained the age of seventeen years and must pass examinations in algebra, plane and solid geometry, physics, history of the United States (or ancient history), English, French and German. Preparation in some one of a series of elective subjects is also required. A division of these examinations between different examination periods is allowed. In general, a faithful student who has passed creditably through a good high school, having two years' study of French and German, should be able to pass the Institute examinations.

Graduates of colleges, and in general all applicants presenting certificates representing work done at other colleges, are excused from the usual entrance examinations and from any subjects already satisfactorily completed. Records of the College Entrance Examination Board, which holds examinations at many points throughout the country and in Europe, are also accepted for admission to the Institute.

Instruction is given by means of lectures and recitations, in connection with appropriate work in the laboratory, drawing-room or field. To this end extensive laboratories of chemistry, physics, biology, mining, mechanical engineering, applied mechanics, and the mechanic arts, have been thoroughly equipped, and unusual opportunities for field-work and for the examination of existing structures and industries have been secured. So far as is practicable, instruction is given personally to small sections rather than by lectures to large bodies of students.

The regular courses are of four years' duration, and lead to the degree of Bachelor of Science. In most courses the work may also be distributed over five years by students who prefer to do so. Special students are admitted to work for which they are qualified; and the degrees of Master of Science, Doctor of Philosophy, and Doctor of Engineering are given for resident study subsequent to graduation. Opportunity for research is offered in all the departmental laboratories, in the three recently established Research Laboratories of Applied Chemistry and Physical Chemistry, and in the Sanitary Research Laboratory and Sewage Experiment Station.

The tuition fee not including breakage in the laboratories, is \$250 a year. In addition, \$80 to \$35 per year is required for books and drawing materials.

For catalogues and information, address

ALLYNE L. MERRILL, *Secretary of the Faculty,*

491 Bolyston Street, Boston.

The Technology Review

VOL. XV.

JANUARY, 1913

No. 1

Contents

	PAGE
FUTURE RELATIONS WITH HARVARD	1
STUDENT LIFE AT THE NEW TECHNOLOGY	7
FROM THE FACULTY POINT OF VIEW	11
FROM THE STUDENT POINT OF VIEW	13
ACCOMMODATIONS FOR THE INSTRUCTING STAFF	17
WALKER MEMORIAL AND THE ALUMNI	20
A SURVEY OF OTHER INSTITUTIONS	22
WHAT THE NEW GYMNASIUM SHOULD BE	27
OUT-OF-DOOR ATHLETICS	32
THE NEW TECHNOLOGY DINING ROOMS	34
A PLAN FOR STUDENT HOUSING	39
DISCUSSING THE FRATERNITY PROBLEM	45

Contents

	PAGE
TWENTY-TWO HUNDRED SUBSCRIBERS	47
ENROLLMENT LARGER THAN EVER	49
NEWS FROM ALUMNI CENTERS	52
TECH MEN IN THE PUBLIC EYE	58
DOCTORS OF CIVILIZATION	60
MISCELLANEOUS CLIPPINGS	62
BOOK REVIEWS	72
PUBLICATIONS OF THE INSTITUTE STAFF	75
NEWS FROM THE CLASSES	81

ALUMNI ASSOCIATION
OF THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OFFICERS

President, FREDERIC H. FAY, '93 (term expires January, 1914),

Vice-Presidents, { LEONARD METCALF, '92 (term expires January, 1914).

WILLIAM H. KING, '94, (term expires January, 1915).

Secretary-Treasurer, WALTER HUMPHREYS, '97 (term expires January, 1914).

Executive Committee

THE PRESIDENT, VICE-PRESIDENTS, AND SECRETARY-TREASURER.

JASPER WHITING, '89 (term expires January, 1915).

MERTON L. EMERSON, '04 (term expires January, 1915).

GEORGE B. GLIDDEN, '93 (term expires January, 1914).

LAWRENCE ALLEN, '07 (term expires January, 1914).

Representatives at Large

Term expires January, 1914

CHARLES F. LAWTON, '77.

JOHN L. SHORTALL, '87.

SPAULDING BARTLETT, '90.

E. LAURENCE HURD, '95.

INGERSOLL BOWDITCH, '00.

Term expires January, 1915

ARTHUR C. ANTHONY, '86.

LOUIS K. ROURKE, '95.

LUTHER K. YODER, '95.

W. LYMAN UNDERWOOD, '98.

THOMAS E. SEARS, '03.

Term Members of the Corporation

Term expires March, 1913

JAMES W. ROLLINS, '78.

EVERETT MORSS, '85.

ARTHUR T. BRADLEE, '88.

Term expires March, 1914

WALTER B. SNOW, '82.

THEODORE W. ROBINSON, '84.

CHARLES R. RICHARDS, '85.

Term expires March, 1915

FRANK W. ROLLINS, '81.

EDWIN S. WEBSTER, '88.

EDWARD CUNNINGHAM, '91.

Term expires March, 1916

ARTHUR WINSLOW, '81.

HENRY HOWARD, '89.

HENRY A. MORSS, '93.

Term expires March, 1917

EBEN S. STEVENS, '68.

ARTHUR D. LITTLE, '85.

LOUIS A. FERGUSON, '88.

Nominating Committee

Term expires January, 1913	Term expires January, 1914	Term expires January, 1915
W. B. SNOW, '82.	F. L. LOCKE, '86, <i>Chairman.</i>	I. W. LITCHFIELD, '85.
F. H. FAY, '93.	E. S. WEBSTER, '88.	ARTHUR A. NOYES, '86.
C.-E. A. WINSLOW, '98.	A. F. BEMIS, '93.	LAWRENCE ALLEN, '07.

STANDING AND SPECIAL COMMITTEES

Committee on Permanent Funds

FRANCIS C. GREEN, '95, *Treasurer*, to serve until the annual meeting in 1914.
ROBERT H. RICHARDS, '68, to serve until the annual meeting in 1913.
JAMES P. MUNROE, '82, to serve until the annual meeting in 1915.

Advisory Council on Athletics

J. ARNOLD ROCKWELL, *Chairman*, '96 (term expires in 1913).
ALLAN W. ROWE, '01 (term expires in 1914).
J. L. BATCHELDER, '90 (term expires in 1915).

Committee on Publication of The Technology Review

WALTER BRADLEE SNOW, '82. ARTHUR AMOS NOYES, '86.
WALTER HUMPHREYS, '97. FREDERIC H. FAY, '93.
ISAAC WHITE LITCHFIELD, '85, *Editor.*

Walker Memorial Committee

HARRY W. TYLER, '84, *Chairman.*
CHARLES M. BAKER, '78, *Treasurer.*
CHARLES-EDWARD A. WINSLOW, '98, *Secretary.*
ROBERT H. RICHARDS, '68. WILLIAM B. THURBER, '89.
THOMAS HIBBARD, '75. JOHN L. BATCHELDER, '90.
EVERETT MORSS, '85. ALBERT F. BEMIS, '93.

Tech Show Advisory Council

Committee on Musical Affairs

I. W. LITCHFIELD, '85. GEORGE B. GLIDDEN, '93, *Chairman.*
M. L. EMERSON, '04. HARRY S. MORK, '99.
G. F. LOUGHLIN, '03.

Committee on Student Housing

A. F. BEMIS, '93, *Chairman.* F. L. LOCKE, '86.
CHARLES W. EATON, '85. FRANK A. BOURNE, '95.

Committee on a Course in Business Engineering

HENRY MORSS, '93, *Chairman.* A. A. NOYES, '86.
T. W. ROBINSON, '84. J. F. McELWAIN, '97.

Alumni Fund Committee

EVERETT MORSS, '85, *Chairman.* I. W. LITCHFIELD, '85, *Secretary.*
JAMES W. ROLLINS, '78. EDWIN S. WEBSTER, '88.
ARTHUR T. BRADLEE, '88. FREDERIC H. FAY, '93.

COUNCIL OF THE ALUMNI ASSOCIATION

Officers of the Association:—

President, J. W. ROLLINS, '78.

Vice-Presidents, FREDERICK K. COPELAND, '76, LEONARD METCALF, '92.

Secretary-Treasurer, WALTER HUMPHREYS, '97.

Executive Committee, { FRANK W. HODGDON, '76. GEORGE B. GLIDDEN, '93.
 EUGENE C. HULTMAN, '96. LAWRENCE ALLEN, '07.

Five latest living ex-Presidents:—

EVERETT MORSS, '85.

EDWIN S. WEBSTER, '88.

WALTER B. SNOW, '82.

A. F. BEMIS, '93.

A. A. NOYES, '86.

Representatives at large:—

CHARLES F. LAWTON, '77.

WILLIS R. WHITNEY, '90.

OAKES AMES, '85.

E. LAURENCE HURD, '95.

HARRY E. CLIFFORD, '86.

FRANKLIN T. MILLER, '95.

JOHN L. SHORTALL, '87.

HOWARD L. COBURN, '87.

SPAULDING BARTLETT, '90.

INGERSOLL BOWDITCH, '00.

Class Representatives:—

'68, ROBERT H. RICHARDS.

'90, WILLIAM Z. RIPLEY.

'69, HOWARD A. CARSON.

'91, ARTHUR H. ALLEY.

'70, E. K. TURNER.

'92, LEONARD METCALF.

'71, E. W. ROLLINS.

'93, FREDERIC H. FAY.

'72, EDGAR W. UPTON.

'94, S. C. PRESCOTT.

'73, SAMUEL E. TINKHAM.

'95, ANDREW D. FULLER.

'74, GEORGE H. BARRUS.

'96, J. ARNOLD ROCKWELL.

'75, THOMAS HIBBARD.

'97, C. W. BRADLEE.

'76, C. T. MAIN.

'98, SETH K. HUMPHREY.

'77, JOHN ALDEN.

'99, H. J. SKINNER.

'78, C. M. BAKER.

'00, N. J. NEALL.

'79, E. C. MILLER.

'01, ROBERT L. WILLIAMS.

'80, GEORGE H. BARTON.

'02, F. H. HUNTER.

'81, JOHN DUFF.

'03, MYRON H. CLARK.

'82, JAMES P. MUNROE.

'04, M. L. EMERSON.

'83, HORACE B. GALE.

'05, G. DeW. MARCY.

'84, HARRY W. TYLER.

'06, JOHN J. DONOVAN.

'85, I. W. LITCHFIELD.

'07, LAWRENCE ALLEN.

'86, A. A. NOYES.

'08, H. T. GERRISH.

'87, HENRY F. BRYANT.

'09, CARL W. GRAM.

'88, ARTHUR T. BRADLEE.

'10, HERBERT S. CLEVERDON.

'89, HENRY HOWARD.

'11, ORVILLE B. DENISON.

'12, RANDALL CREMER.

Local societies with representation on the Council:—

TECHNOLOGY CLUB OF THE MERRIMACK VALLEY, Channing Whitaker, '69.
TECHNOLOGY CLUB OF NEW YORK, Francis C. Green, '95.
NORTHWESTERN ASSOCIATION, M. I. T., I. W. Litchfield, '85.
PITTSBURG TECHNOLOGY ASSOCIATION, Sumner B. Ely, '92.
TECHNOLOGY CLUB OF PHILADELPHIA, William H. Blakeman, '05.
WASHINGTON SOCIETY OF THE M. I. T., I. W. Litchfield, '85.
TECHNOLOGY CLUB OF MILWAUKEE, I. W. Litchfield, '85.
M. I. T. CLUB OF CENTRAL NEW YORK, Irving S. Merrell, '96.
THE CINCINNATI M. I. T. CLUB, John A. Hildabolt, '75.
TECHNOLOGY CLUB OF NORTHERN OHIO, Paul W. Litchfield, '96.
TECHNOLOGY CLUB OF RHODE ISLAND, E. B. Homer, '85.
TECHNOLOGY CLUB OF PUGET SOUND, I. W. Litchfield, '85.
TECHNOLOGY CLUB OF SOUTHERN CALIFORNIA, John C. Chase, '74.
TECHNOLOGY CLUB OF BUFFALO, George A. Ricker, '86.
TECHNOLOGY ASSOCIATION OF MINNESOTA, I. W. Litchfield, '85.

Other local societies not yet appointed a representative on the Council:—

TECHNOLOGY CLUB OF CENTRAL PENNSYLVANIA.
TECHNOLOGY CLUB OF THE CONNECTICUT VALLEY.
DETROIT ASSOCIATION OF THE M. I. T.
TECHNOLOGY CLUB OF HARTFORD, CONN.
INLAND EMPIRE ASSOCIATION OF THE M. I. T.
TECHNOLOGY CLUB OF NEW BEDFORD.
TECHNOLOGY ASSOCIATION OF NORTHERN CALIFORNIA.
TECHNOLOGY ASSOCIATION OF OREGON.
ROCKY MOUNTAIN TECHNOLOGY CLUB.
TECHNOLOGY CLUB OF THE SOUTH.
BROOKLINE TECHNOLOGY ASSOCIATION.
TECHNOLOGY ASSOCIATION OF JAPAN.
TECHNOLOGY CLUB OF THE FAR EAST.
TECHNOLOGY CLUB OF ROCHESTER.
ST. LOUIS SOCIETY OF THE M. I. T.
WORCESTER COUNTY TECHNOLOGY CLUB.
TECHNOLOGY CLUB OF ALBANY, NEW YORK.
SOUTHEASTERN TECHNOLOGY ASSOCIATION.
INTER-MOUNTAIN TECHNOLOGY ASSOCIATION.
ATLANTA M. I. T. ALUMNI ASSOCIATION.
TECHNOLOGY CLUB OF THE UNIVERSITY OF ILLINOIS.
TECHNOLOGY ASSOCIATION OF NEW HAMPSHIRE.
SOUTHWESTERN ASSOCIATION OF M. I. T.

CLASS SECRETARIES

ROBERT HALLOWELL RICHARDS	'68	FREDERIC H. KEYES, Ass't Sec.,	'93
Massachusetts Institute of Technology, Boston.		739 Boylston St., Boston, Mass.	
HOWARD ADAMS CARSON	'69	SAMUEL CATE PRESCOTT	'94
79 Glenwood Street, Malden, Mass.		Massachusetts Institute of Technology, Boston.	
CHARLES ROBERT CROSS	'70	WILLIAM H. WINKLEY	'95
Massachusetts Institute of Technology, Boston.		44 Kilby Street, Boston, Mass.	
EDWARD WARREN ROLLINS	'71	CHARLES E. LOCKE	'96
Dover, N. H.		Massachusetts Institute of Technology, Boston.	
C. FRANK ALLEN	'72	J. ARNOLD ROCKWELL, Ass't Secretary	'96
Massachusetts Institute of Technology, Boston.		24 Garden St., Cambridge, Mass.	
SAMUEL EVERETT TINKHAM	'73	JOHN ARTHUR COLLINS, JR.	'97
126 Thornton Street, Roxbury, Mass.		67 Thorndyke Street, Lawrence, Mass.	
CHARLES FRENCH READ	'74	ERNEST F. RUSS	'98
Old State House, Boston, Mass.		70 High Street, Boston, Mass.	
EDWARD A. W. HAMMATT	'75	HERVEY JUDSON SKINNER	'99
15 Water St., Newton Centre, Mass.		93 Broad Street, Boston, Mass.	
JOHN RIPLEY FREEMAN	'76	NEWITT J. NEALL	'00
Grosvenor Building, Providence, R. I.		12 Pearl Street, Boston, Mass.	
RICHARD AUGUSTUS HALE	'77	ROBERT L. WILLIAMS	'01
Essex Company, Lawrence, Mass.		12 Lake Street, Brighton, Mass.	
E. P. COLLIER	'78	FREDERICK HUSTON HUNTER	'02
274 Summer Street, Boston, Mass.		281 Park Street, West Roxbury, Mass.	
EDWIN CHILD MILLER	'79	J. ALBERT ROBINSON, Ass't Secretary	'02
Wakefield, Mass.		87 Milk St., Boston, Mass.	
GEORGE HUNT BARTON	'80	MYRON H. CLARK	'03
16 Lexington Avenue, Cambridge, Mass.		43 Glen Rock Circle, Malden, Mass.	
FRANK ELDEN CAME	'81	R. H. NUTTER	'03
Metcalfe Apartments, Westmount, Quebec, P. Q.		Ass't Secretary, Box 272, Lynn, Mass.	
FRANK H. BRIGGS	'81	EVERETT OSGOOD HILLER	'04
Ass't Secretary, 22 High St., Boston, Mass.		12 Dane St., Jamaica Plain, Mass.	
WALTER BRADLER SNOW	'82	ADDISON F. HOLMES	'04
170 Summer Street, Boston, Mass.		Ass't Secretary, 7 Holborn St., Roxbury, Mass.	
HARVEY STUART CHASE	'83	GROSVENOR DEWITT MARCY	'05
84 State Street, Boston, Mass.		246 Summer Street, Boston, Mass.	
HARRY W. TYLER	'84	C. F. W. WETTERER	'06
Massachusetts Institute of Technology, Boston.		147 Milk St., Boston, Mass.	
ISAAC WHITE LITCHFIELD	'85	BRYANT NICHOLS	'07
Massachusetts Institute of Tehhnology, Boston.		10 Grand View Road, Chelsea, Mass.	
ARTHUR GRAHAM ROBBINS	'86	HAROLD S. WONSON	'07
Massachusetts Institute of Technology, Boston.		Ass't Secretary, 149 East Main Street, Gloucester, Mass.	
EDWARD GALBRAITH THOMAS	'87	RUDOLPH B. WEILER	'08
Boss Mfg. Co., Kewanee, Ill.		Care of Sharples Separator Co., West Ches- ter, Pa.	
WILLIAM GAGE SNOW	'88	CHARLES W. WHITMORE	'08
24 Milk Street, Boston, Mass.		Ass't Secretary, 1553 Beacon Street, Brookline, Mass.	
WALTER H. KILHAM	'89	CARL W. GRAM	'09
9 Park Street, Boston, Mass.		Care of Walter Baker Co., Milton, Mass.	
GEORGE L. GILMORE	'90	JOHN MOXCEY FITZWATER	'10
Lexington, Mass.		Ovid, N. Y.	
HOWARD CARLETON FORBES	'91	G. BERGEN REYNOLDS	'10
88 Broad Street, Boston, Mass.		Ass't Secretary, 142 Highland Ave., Somer- ville, Mass.	
W. A. JOHNSTON	'92	O. B. DENISON	'11
Massachusetts Institute of Technology, Boston.		7 Wachusett St., Worcester, Mass.	
C. H. CHASE	'92	RANDALL CREMER	'12
Ass't Secretary, Tufts College, Mass.		Massachusetts Institute of Technology.	
FREDERIC HAROLD FAY	'93		
60 City Hall, Boston, Mass.			

LOCAL ALUMNI ASSOCIATIONS

- Albany — TECHNOLOGY CLUB OF ALBANY, N. Y., Ralph C. Robinson ('01), Secretary, Research Laboratory General Electric Co., Schenectady, N. Y.
- Atlanta — ATLANTA M. I. T. ALUMNI ASSOCIATION, W. R. Collier ('00), Secretary, Electric and Gas Bldg., Atlanta, Ga.
- Birmingham — SOUTHEASTERN TECHNOLOGY ASSOCIATION, Joseph H. White, ('00), Brown-Marx Bldg., Birmingham, Ala.
- ☞ Luncheon — Saturdays at 1.00 p. m. at the Turnverein.
- Boston — TECHNOLOGY CLUB OF BOSTON, Dr. Robert Seaton Williams ('02), Secretary, 83 Newbury Street, Boston, Mass.
- Buffalo — TECHNOLOGY CLUB OF BUFFALO, H. M. Cowper ('05), Secretary, 510 Franklin Street, Buffalo, N. Y.
- Chicago — NORTHWESTERN ASSOCIATION OF THE M. I. T., George H. Lukes ('92), Secretary, 137 So. LaSalle St., Chicago, Ill.
- ☞ Luncheon — Thursdays at 12.30 p. m. at Grand Pacific Hotel, 178 Madison Street.
- Cincinnati — THE CINCINNATI M. I. T. CLUB, Stuart R. Miller ('07), Secretary, 3366 Morrison Avenue, Clifton, Cincinnati, Ohio.
- ☞ Luncheon — Tuesdays from 12 to 1.30 p. m. at Bismarck Grill, Walnut Street.
- Cleveland — TECHNOLOGY CLUB OF NORTHERN OHIO, Sidney Young Ball ('03), Secretary, Ball Watch Co., Cleveland, Ohio.
- Denver — ROCKY MOUNTAIN TECHNOLOGY CLUB, Walter H. Trask, Jr. ('06), Secretary, 7th and Bannock Streets, Boise, Idaho.
- Detroit — DETROIT TECHNOLOGY ASSOCIATION, Currier Lang ('04), Secretary, care of Solvay Process Co., Detroit, Mich.
- Hartford — TECHNOLOGY CLUB OF HARTFORD, CONN., George William Baker ('92), Secretary, Box 983, Hartford, Conn.
- Hawaii—HAWAII TECHNOLOGY CLUB, Norman Watkins ('98), Secretary, Box 767, Honolulu, H. I.
- Japan — TECHNOLOGY ASSOCIATION OF JAPAN, Dr. Takuma Dan ('78), Secretary-Treasurer, 344 Awoyama Harajiku, Tokio, Japan.
- Kansas City, Mo. — SOUTHWESTERN ASSOCIATION OF M. I. T., Robert S. Beard ('05), Secretary-Treasurer, 714 Y. M. C. A. Dormitories, Kansas City, Mo.
- Lawrence } — TECHNOLOGY CLUB OF THE MERRIMACK VALLEY, John Arthur Collins, Jr. ('97),
Lowell } Secretary, 67 Thorndyke Street, Lawrence, Mass.
- Los Angeles — TECHNOLOGY CLUB OF SOUTHERN CALIFORNIA, L. A. Parker ('06), Secretary, 689-691 Pacific Electric Building, Los Angeles, Cal.
- ☞ Luncheon — First Wednesday of each month at the University.
- Manchester — TECHNOLOGY ASSOCIATION OF NEW HAMPSHIRE, Harold A. Smith, ('11), Secretary-Treasurer, 186 Lowell Street, Manchester, N. H.
- Manila — TECHNOLOGY CLUB OF THE FAR EAST, William A. Adams ('08), Secretary, Bureau of Lands, Manila, P. I.
- Milwaukee — TECHNOLOGY CLUB OF MILWAUKEE, Mitchell Mackie ('05), Secretary, Commercial Auto Co., Milwaukee, Wis.
- Minneapolis — TECHNOLOGY ASSOCIATION OF MINNESOTA, DeW. C. Ruff ('07), Secretary, Manhattan Building, St. Paul, Minn.
- New Bedford — TECHNOLOGY CLUB OF NEW BEDFORD, MASS., Richard D. Chase ('92), Secretary, 59 Fourth Street, New Bedford, Mass.

New Orleans — TECHNOLOGY CLUB OF THE SOUTH, Frank Wyman Crosby ('90), Secretary, 501-504 Denegre Building, New Orleans, La.

New York — TECHNOLOGY CLUB OF NEW YORK, 17 Gramercy Park, Walter Large ('79), Secretary, 15 William Street, New York, N. Y.

Philadelphia — TECHNOLOGY CLUB OF PHILADELPHIA, Dudley Clapp ('10), Secretary, Valdosta, Ga.

Pittsburg — PITTSBURG ALUMNI ASSOCIATION, L. K. Yoder ('95), Secretary, 5810 Murrayhill Place, Pittsburgh, Pa.

Portland — TECHNOLOGY ASSOCIATION OF OREGON, Felix A. Burton ('09), Secretary, 401 Worcester Bldg., Portland, Ore.

Providence — TECHNOLOGY CLUB OF RHODE ISLAND, Gerald M. Richmond ('99), Secretary, 532 Grosvenor Building, Providence, R. I.

Rochester — TECHNOLOGY CLUB OF ROCHESTER, J. F. Ancona ('03), Secretary, 190 Birr Street, Rochester, N. Y.

St. Louis — ST. LOUIS SOCIETY OF THE M. I. T., Amasa M. Holecombe ('04), Secretary-Treasurer, care of Carr & Carr, 510 Pine Street, St. Louis, Mo.

San Francisco — TECHNOLOGY ASSOCIATION OF NORTHERN CALIFORNIA, Office, 832 Merchants Exchange Bldg., San Francisco, Cal., Howard Coburn Blake ('06), Secretary, 3009 Deakin Street, Berkeley, Cal.

Seattle — TECHNOLOGY CLUB OF PUGET SOUND, M. P. Anderson ('10), Secretary, 111 Cherry Street, Seattle, Wash.
Luncheon — Third Tuesday of each month.

Spokane — INLAND EMPIRE ASSOCIATION OF THE M. I. T., Philip F. Kennedy ('07), Secretary, 811 E. Mission Ave., Spokane, Wash.

Springfield — TECHNOLOGY CLUB OF THE CONNECTICUT VALLEY, Ernest W. Pelton ('03), Secretary, 77 Forest Street, New Britain, Conn.

Steelton — TECHNOLOGY CLUB OF CENTRAL PENNSYLVANIA, Stephen Badlam ('00), Secretary, Box 183, Steelton, Pa.

Syracuse — M. I. T. CLUB OF CENTRAL NEW YORK, H. N. Burhans ('07), Secretary, 227 McLennan Avenue, Syracuse, N. Y.

Urbana — TECHNOLOGY CLUB OF THE UNIVERSITY OF ILLINOIS, H. M. Parker ('94), Secretary, University of Illinois, Urbana, Ill.

Utah — INTER-MOUNTAIN TECHNOLOGY ASSOCIATION, Gregory M. Dexter ('08), Secretary-Treasurer, Box 195, Salt Lake City, Utah.

Washington — WASHINGTON SOCIETY OF THE M. I. T., Parker V. Dodge ('07), Secretary, 1860 Victor Bldg., Washington, D. C.

Worcester — TECHNOLOGY ASSOCIATION OF WORCESTER COUNTY, Louis E. Vaughan ('02), Secretary-Treasurer, 72 West St., Worcester, Mass.

FIXED LUNCHEONS

Birmingham — Southwestern Technology Association at the Turnverein, Saturdays at 1.00 p. m.

Chicago — Northwestern Association of M. I. T. at Grand Pacific Hotel Thursdays at 12.30 p. m.

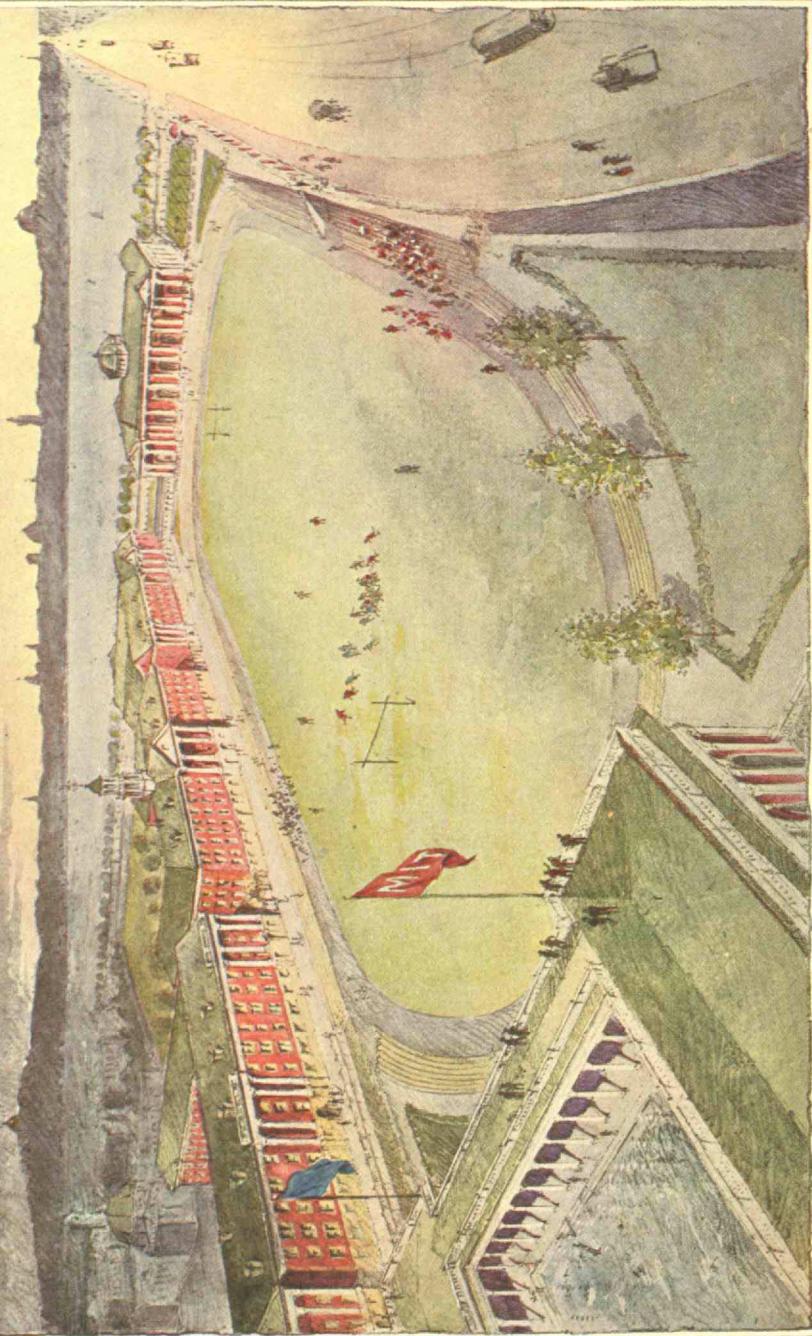
Cincinnati — Cincinnati M. I. T. Club at the Bismarck Grill, Walnut Street, Tuesdays from 12-1.30 p. m.

Los Angeles — Technology Club of Southern California at the University on the first Wednesday of each month.

Seattle — Technology Club of Puget Sound, at the College Club third Tuesday of each month.

WALKER MEMORIAL AND STUDENT HOUSES FROM THE GYMNASIUM

(Sketch prepared for the Alumni Committee)



The Technology Review

VOL. XV

JANUARY, 1913

No. 1

FUTURE RELATIONS WITH HARVARD

President Maclaurin Outlines the Kind and Extent of Co-operation Desirable—President's Annual Report Shows Great Advances at Technology

In his annual report to the Corporation, President Maclaurin of the Massachusetts Institute of Technology makes it very plain that there can in the future be no rational talk about a merger with Harvard. He does this in a way comparable to that in which he swept aside the mutterings at the Cambridge hearings about non-taxation, by a calm and clear statement of the conditions. He says directly: "There can be no thought of the Institute's dependence," and further, that it is now strong enough to stand alone or to enter if it wishes into relations of coöperation in educational effort. Because the latter term might be misunderstood and serve for a cause of discussion, President Maclaurin goes to some trouble to show how necessary for efficiency in education is the working together of neighboring institutions. He makes the broad, fundamental principles of such coöperation with Harvard so clear that no one can unintentionally mistake them or distort them into merger arguments. The matter is brought to the front from its importance in the policy of the Institute.

The text of Doctor Maclaurin's report in this matter follows:

"Another problem that lies before us is the kind and the limits of the coöperation that should be encouraged with other educational institutions and particularly with Harvard University. There has been much friendly coöperation between Harvard and Technology, especially in the last few years, and now that the Institute

is going to Cambridge within a few minutes' journey from Harvard Square, the opportunities for such coöperation will be greatly increased. How far in this direction is it expedient to go? Fortunately, this is a question that it should be possible to consider calmly and to discuss patiently, now that there can be no thought of the Institute's dependence and no doubt in the minds of any of us that Technology is strong enough either to enter safely into alliances or to stand absolutely alone.

"The duty of coöperation in educational effort wherever such coöperation is practicable has been most forcibly expressed by the secretary of your Corporation, Mr. James P. Munroe. 'It would be wise,' he has said, 'for the Institute to enlist all the higher educational force of the Commonwealth in working out some plan through which, jointly, they may help Massachusetts to solve those perplexing problems of commercial growth and of industrial education which today confront her. Incidentally such partnership would be of immense benefit to education itself, which suffers in few ways so much as through lack of coöperation among those colleges universities and schools of applied science which not only should be laboring together for the common good, not only should be avoiding by mutual agreement those duplications of resources and of effort that keep them all painfully poor, but also should be devising some plan by which students may be transferred from one to another without loss of time and effort, and may be brought thereby under those varied stimuli of environment and teaching so beneficial to ambitious youth.'

"Unfortunately, the phrase 'duplication of effort' has often been so misapplied to cases where there is no real duplication in the sense that is implied as to divert man's attention from cases that really call for a remedy. There is no regrettable duplication where different men or machines are employed in two institutions, even although they do exactly similar work, provided they are employed to *their full capacity*. Unfortunately, in a properly equipped school of applied science a great deal of costly machinery must be installed that is used only occasionally, and, especially in the higher branches only by small numbers of students. The duplication of such machinery in neighboring institutions imposes a heavy financial burden on the community that furnishes it, and no reasonable effort should be spared to avoid it. A few examples may give definiteness to these general statements. The Institute is planning

to build and equip the most complete mining and metallurgical laboratories in existence. It would cost Harvard, and therefore the community, hundreds of thousands of dollars to duplicate these and yet all the students of mining and metallurgy at Harvard could easily be accommodated in the Institute's new laboratories without detriment to the Technology students. On the other hand, it would cost Technology hundreds of thousands of dollars to duplicate the University Museum, whose great collection of minerals, fossils, etc., might be open to the senior students at Technology without any overcrowding of, or interference with, the work of the regular students of Harvard. If the Pratt will be upheld, the Institute will probably undertake to increase the efficiency of its department of naval architecture by building an experimental tank. This is considered by competent authorities to be a necessary part of a department that is fully equipped to advance the science of ship-building. One such tank would suffice very easily for two or more neighboring institutions and it would cost upwards of a hundred thousand dollars. Such examples might easily be multiplied, but the above may suffice to indicate the kind of waste that would be saved if the duplication of machinery could be avoided. This duplication does not, however, represent the whole waste of the present system. More serious than any duplication of machines is the loss that falls upon the community by excluding advanced students of each institution from the benefit of coming under the influence of the pioneers of science in the other institution, men whose character and attainments make any suggestion of 'duplication' absurd. For years, the advanced students of geology at this Institute have been stimulated by Professor Daly's skill and enthusiasm as a teacher as well as by his scientific achievements. Now that he has gone to Harvard, it is regrettable that such students should be cut off from his influence, especially in view of the fact that the advanced students of Harvard and Technology together would not be too many for a man of his capacity to deal with effectively. Indeed, in such cases there is a loss rather than a gain in efficiency, merely from the educational standpoint where the number of students is unduly small. I have already referred to the distinction of Professor Lindgren, who now occupies the William Barton Rogers professorship of geology. Harvard is not likely to attempt the impossible task of 'duplicating' such a man, but it would be a great advantage to the advanced

students of that university if they could come within the range of his influence as a teacher.

"All this is very well-worn ground in academic circles. The fact that extensive coöperation along the lines suggested has been so rare proves that there are real difficulties in the way of its adoption and, of course, no good can come of minimizing difficulties that are real and not imaginary. With regard to any scheme that might be proposed to meet the actual conditions at Harvard and Technology, I shall content myself here with laying down three propositions: (1) No extensive coöperation can be maintained with any satisfaction to either party and consequently with any chance of permanence unless the idea of competition between the institutions is eliminated. (2) The scheme to be worth much consideration must be broad enough to throw open the resources of both institutions (in equipment and in men) to at least some of the students of the other. (3) The obvious way to coöperate is in the treatment of the graduate students, leaving the greater part of Technology entirely alone. I do not suggest any scheme of coöperation for I should not think of committing myself to any such scheme until I had discussed the matter carefully with members of the Faculty and had the benefit of their criticism and suggestions."

Changes in the Faculty have already been announced and the President in recounting them speaks in eloquent and sincere praise of Professor Despradelle, deceased, whose "ideals and methods form a permanent portion of the tradition that is handed down to future generations." With reference to the temporary appointment of Professor Duquesne of Harvard to the Rotch professorship of architectural design, Dr. Maclaurin says, "He has entered easily into the spirit of Technology and been unsparing in his efforts to stimulate the students to the highest endeavor." Acknowledgment is made of the generous good-will displayed by the Harvard authorities in permitting his sacrifice of time and energy in the interests of Technology.

The number of students on November 1 was 1611, the largest in the history of the Institute. A much larger number presented themselves for admission, but more than usual were advised to withdraw during the first month of the year in pursuance of the Technology policy of raising the standards when this can be done without injustice to deserving students.

The statistics with reference to the origin of the students show

that the Institute is steadily extending its national and international influence, all parts of the Union being represented and there is an important foreign contingent from widely separated parts of the world.

President Maclaurin's report to the Corporation reviews the matters of the year. Of Professor A. Lawrence Rotch, a member of the Corporation, deceased since the last report, Doctor Maclaurin says:—"He joined the Corporation in 1891, seven years after his graduation from the Institute and was always solicitous for the welfare and advancement of his Alma Mater. His allotted span of life was brief, but it sufficed for him to build a noble and enduring monument of scientific achievement. His researches show how valuable is a training in the practical applications of science to the man who knows how to profit by it in the effort to push forward the boundaries of science. He formed one of a brilliant band of Technology graduates whose contributions to pure science have been crowned by the recognition of the scientific world, and whose achievements bear testimony to the depth and breadth of the Institute's mode of training."

President Maclaurin acknowledged the splendid work of two others, C. C. Jackson, resigned from the Corporation, and William B. Thurber, the impending resignation of whom was here announced. He took up the duties of treasurer three years ago at a difficult and critical stage of the Institute's development "and has rendered a great service to his Alma Mater by his devotion to its interests."

Taking the figures of foreign students—recently published in *Science*—it appears that the educational institutions that attract any considerable number of foreign students may be arranged in an ascending scale according to the percentage of foreigners to the whole student body, as follows: Michigan 2.1, Yale 2.7, Northwestern 2.8, Illinois 3.0, Columbia 3.2, Harvard 3.3, Cornell 3.7, Pennsylvania 4.0 and Technology 6.8. Thus the Institute has nearly twice as large a proportion of foreigners as any other institution in the country.

As regards the students from the United States, it is interesting to know that the center of population for them is now in the state of New York close to the borders of Pennsylvania and that it is steadily moving westward. Excluding Massachusetts, the center of student population is now a point southwest of Toledo.

The number of college graduates pursuing courses at Technology

was 161 ten years ago and 186 five years ago; today the number is 230. By way of comparison it may be interesting to note that the numbers at Harvard and Yale (Sheffield Scientific School) are 107 and 171. In addition to the 230 college graduates at the Institute, there are 200 other students who have come from other colleges before graduation.

The prosperity of the Institute was noted briefly by its President, for the succession of fortunate events is already well known. The problem of the site had been solved and the land purchased, the price paid being \$775,000. Of this \$500,000 came from T. Coleman duPont and the remainder from twenty public-spirited citizens, the majority of them, like Mr. duPont, being members of the Corporation. Then there has been the great gift of "Mr. Smith," which shows a great man at his best, "ready to make a noble use of his wealth and anxious to do a great thing quietly and unostentatiously." On this account there was received in June a check for a million dollars, forestalling by this amount such expenditures as must soon be incurred.

Not long afterwards the death of Mr. Pratt revealed the fact that he had made provision in his will for the endowment of the Institute's department of naval architecture and marine engineering. The validity of the will is being disputed, but if it be upheld, the amount to be transferred to Technology is \$750,000, of which already nearly \$700,000 is in the hands of the executors.

Three other gifts were noted by the President, \$40,000 for the summer camp in engineering, \$50,000 for the establishment of the Samuel Cabot fund for research in industrial chemistry, and the Dering library the gift of The American Telephone and Telegraph Co. President Maclaurin brings to attention the fact that of the gifts to the Institute within eighteen months, considerably more than three million dollars has come from outside of Massachusetts.

The New York Reunion

As the REVIEW goes to press the classes are meeting in New York to organize the Technology Clubs Associated and celebrate the annual meeting of the Alumni Association. A full account of the reunion will appear in the February REVIEW.

STUDENT LIFE AT THE NEW TECHNOLOGY

Preliminary Plans for the Development of Undergraduate Social Life at the New Technology—Facilities for Physical Exercise an Important Feature

It is known to readers of the REVIEW that while the Corporation and Faculty of the Institute are making a most thorough and systematic study of the present and future needs of its many departments of instruction, the not less important matters of social and physical welfare are by no means forgotten.

The following articles have been prepared in coöperation by the respective writers in order to present to the alumni generally matters that have been the subject of protracted study and discussion by certain committees.*

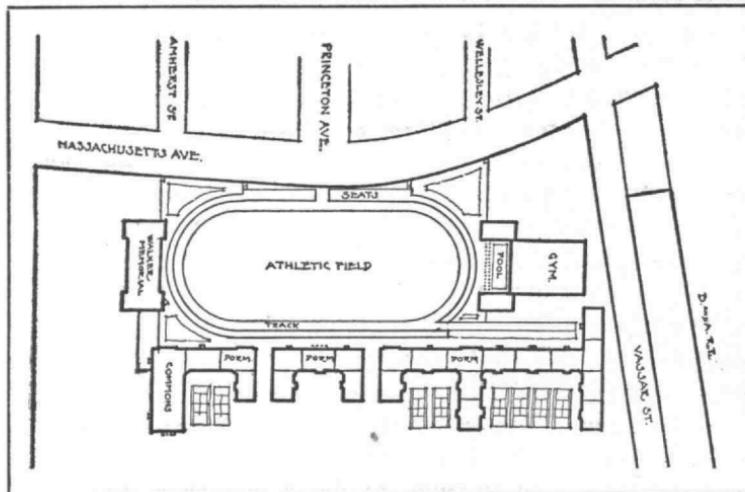
For the sake of definiteness, certain plans and a general view are shown. It will naturally be appreciated that these can have at present no authoritative significance. They have been prepared under the direction, and with the general approval, of the committees, and are presented at this time as the best basis for criticism and suggestions by readers of the REVIEW, but no attempt has been made to eliminate minor inconsistencies.

The chief items in our comprehensive program are the Walker Memorial, the Gymnasium, Swimming Pool and Athletic Field, the Student Houses and the Commons. There might well be added to this list a small Infirmary and a Coöperative Store. In the new location it would seem that a better developed system of coöperative purchasing ought to be worth while.

The Walker Memorial, for which funds long since collected now amount to more than \$130,000, is to be a great undergraduate club, with an associate membership open to alumni and officers of instruction. It will be no mere refuge for the idle, but a focus for

*Walker Memorial Special Committee (appointed by President Maclaurin), H. W. Tyler, '84, A. F. Bemis, '93, A. E. Burton, A. A. Noyes, '86, J. A. Rockwell, Jr., '96. Subcommittee on Provision for Instructing Staff, H. P. Talbot, '85, chairman. Student Housing Committee (appointed by Alumni Council), A. F. Bemis, '93, L. Allen, '07, F. A. Bourne, '95, C. S. Eaton, '85, F. L. Locke, '86.

all sorts of student activities, combined with due provision for relaxation, recreation and physical exercise. Here student government and initiative will find natural scope, and congenial relations of teachers, alumni and undergraduates will be fostered. The membership fee for undergraduates, without being high enough to exclude any, will not only relieve the burden on endowment, but will give the undergraduates a sense of independent ownership and real responsibility. Alumni will be encouraged to continue associate membership, and the returning alumnus, whether an associate member or not, will find here "open house."



A PLAN FOR WALKER MEMORIAL, STUDENT HOUSES, GYMNASIUM, AND ATHLETIC FIELD

(Prepared for Alumni Committee)

The proposed separation of the main gymnasium from the Walker Memorial implies no sacrifice of either, but the freer development of both. It was originally intended to make the Walker Memorial a gymnasium. Both the alumni association and the officers of the Institute soon recognized, however, the importance of providing for social as well as physical needs. The present program of the Walker Memorial gives the larger part of the proposed building to the social side, because with ampler resources and a longer look ahead, it seems clearly best to plan for a separate gymnasium. It seems wise however to devote a part of the Walker Memorial to gymnastic purposes, as shown in the accompanying

sketch plans. The gymnasium, swimming pool and athletic field will together provide both for the systematic required physical training of students and for a rational amount of voluntary athletics. Such provision can no longer be regarded as a luxury; our students must not be left to fall by the wayside physically, whether before graduation or after. Particular emphasis will be attached to outdoor exercise, and rowing, skating and tennis should be generally cultivated.

Besides the possibility of combining the "union" and the general gymnasium, the combination of union and commons has also been canvassed. Such a combination would have the advantage of bringing a large proportion of the students into the union daily, and there would be some economy in having one kitchen rather than two. These advantages are in our judgment much more than offset by certain attendant disadvantages. The character of the commons must be such that more than a thousand students must eat their lunches there in a brief noon period, at a minimum, or very moderate, cost. This presents a most difficult problem, the solution of which should not be complicated by combining the commons with something else. A small restaurant will be of great value in the union. A general commons would change its whole character so completely that it would seem to be little more than a collection of dining rooms with miscellaneous adjuncts—surely not what a Walker Memorial should be. We must as a matter of course emphasize its absolutely popular and democratic quality. It is hardly less important to avoid that form of familiarity which impairs respect. It would seem entirely possible to meet the difficulty by an arcade connecting the commons and the memorial, which should certainly be near each other. Such an arcade would serve a number of other very useful purposes.

A valuable element in the new Technology depends on adequate living accommodations. Doubtless many students will continue to live at home in greater Boston, some will prefer to live independently outside the campus. Student houses are needed for most of the others and should be erected as soon as funds are available. Fraternities should be included if suitable conditions can be agreed on, and non-fraternity students should be encouraged to form voluntary groups for living together, so far as this can be done without disadvantage to the ungrouped.

In correlating all these components of the New Technology,

considerations of location, ground area and cost become fundamental. The alumni who are asked to bear the expense of this program must have at least an approximate notion of the necessary cost. Among several plans which have been considered, one is shown in our frontispiece. At present the plans for the other Institute buildings are not sufficiently developed to warrant us in regarding the grouping here shown as anything but a provisional one which seems to us advantageous. Under this arrangement there is economy of ground area, convenience of access to buildings used by all students, a conspicuous location for the Walker Memorial and general adaptability to possible future changes. The whole group is compact and is accessible not only from the educational buildings, but for students coming from houses off the campus.

As to cost, while no definite estimate can even be attempted with our present data, the following schedule may be regarded as a first approximation, based on the experience of other institutions: Walker Memorial, \$250,000; Gymnasium and Swimming Pool, \$300,000; Athletic Field, \$75,000; Commons, \$150,000, making the total initial cost \$775,000.

Maintenance charges in excess of revenue may be estimated roughly at not less than \$25,000 per year, or the annual income on \$600,000 more. No such sums can be expected from the general funds of the Institute. The contributions of the alumni will, therefore, probably determine the extent to which the program as a whole can be realized.

On all phases of the matter as presented in the following articles the committee invites the freest expression of opinion from readers of the REVIEW. We are already indebted to many alumni for criticism and suggestions, and shall welcome more during the brief time which must elapse before making our definite report.

H. W. TYLER, '84.

FROM THE FACULTY POINT OF VIEW

The Walker Memorial will become a center for student democracy and at the same time an instrument of education in itself

To one who is looking forward to the upbuilding of a more helpful and democratic social life for the Technology student the Walker Memorial opens up promising vistas.

He sees a large and dignified building with generous doors thrown wide, pleasant surroundings, an attractive interior, comfort, hospitality, a real club house, welcoming the undergraduate, the alumni, and the instructing staff.

He sees adequate provision made for the housing of all the recognized activities of the undergraduates, and opportunities offered for the sane and helpful development of social intercourse along new lines. Here may be found a restaurant or grill room, where members can bring their friends and visiting guests. Here may be found a billiard room, quiet reading and lounging rooms, well furnished with good books, harmonious pictures, perhaps a statue or two, many souvenirs and mementoes of past student triumphs; while about the whole building prevails the orderly atmosphere of a gentleman's club.

Such a building by no means implies a lowering of the scholarly standard. It means a closer knitting of the ties that bind a student to his Alma Mater and his fellows. It means the reduction of the power of small cliques. It means an invitation to every student to become an effective unit in the whole. It makes it possible for the man of limited means to enjoy many of the real privileges of Institute life. It satisfies to a certain degree and in a legitimate way the natural craving of youth for enjoyment and recreation.

Today at Technology our students from the social standpoint are divided into two distinct classes; the smaller class have the intimate and somewhat exclusive companionship of the fraternities; the larger class only meet their fellow-students at the regular exercises of the Institute. Only a few of this larger class enter the general student activities, such as athletics, Tech Show,

etc., and while deriving much benefit therefrom, do this work sometimes at the sacrifice of their scholastic standing. There remain a large number who go through the four years with very little of the helpful companionship which should be an integral part of Institute training. It is now true that the men in the fraternities who need less of this social opportunity than the others form the larger part of those entering the general student activities. This state of affairs is helpful to the fraternity man, however, in that it leads him to become less exclusive and clannish. The modest and diffident student who lives at home or in a city boarding-house, remains hidden in the background, and being without intimate student friends, rarely makes the effort to bear his share in the social affairs of the Institute. What social life he has is in his own home, or in his boarding house; this may or may not be helpful, but it is essentially different from companionship with young men of his own age and of the same ambitions.

In no college in the country (to my mind) have students tried more zealously to promote good general social conditions than at the Institute. Their establishment of the "point system" for the regulation of the amount of social work that any one student can undertake; the formation of the Institute Committee and its sub-committees, for the regulation of the activities, the authorizing of alumni advisory boards to assist them, and the submission of all their money transactions to a finance commission, show that our students have earnestly considered the problem of the proper adaptation of college life to the requirements of rigorous technological training. The average Institute man is thoroughly in earnest in his determination to get his technological training first, but he is young and brimful of energy and needs the opportunity to develop the social and recreative side of his nature. He can, I believe, be better trusted to solve his own problems than the average college student of his age, for he considers his four years at the Institute as the beginning of his professional career.

ALFRED E. BURTON.

FROM THE STUDENT POINT OF VIEW

Facilities that the Walker Memorial should have to be most attractive and most useful to the undergraduates as outlined by a member of the Institute Committee

In discussing the Walker Memorial from the students' viewpoint, it is natural to consider the present undergraduate life at the Institute, for what the students expect or want in the new memorial is based largely upon what they have or need now. It is fair to assume that the moving of the Institute across the Charles is not going to change materially the activities and interests of the undergraduates, and so those future activities and interests may well be gauged and provided for by using the present conditions as a standard.

The student body as a whole needs a place in the Memorial to eat, a place to relax and enjoy itself, and a place to study. There has been considerable discussion as to whether the large dining room or "commons" should be placed in the memorial or taken care of in some other building. The general opinion is that it would be a great mistake to separate the eating center from the memorial. Convenient and sufficient space should be allowed for the dining rooms, where there will be *table d'hôte*, *à la carte* and lunch counter service. Room should also be provided for men who bring lunches from home. The desire is expressed that one of the dining rooms shall be of the grill-room type, where somewhat better service and surroundings would be furnished, with the idea also of taking care of the members of the Faculty and the alumni visitors to the Institute.

It is a general desire that a much more efficient checking system be installed in the new "union." This should be almost the first thing met upon entrance to the building. Several windows and ample space should be allowed to accommodate hundreds of men in a few minutes. The first floor lounging room should be decidedly larger than the assembly room of the present union. Two large separate rooms would indeed be preferred by men who do not

enjoy a smoke-laden atmosphere, and who now prefer to spend their spare time in the drawing rooms or laboratories rather than in the union. Judging from the present popularity of the fireplace, several of these would be appreciated in the lounging quarters. The idea of ingle-nooks around the fireplaces meets with almost general disapproval as it is felt that the atmosphere of the room should be one of "open house" in every sense. The walls should have not only the pictures and posters of past Tech Shows and athletic events, but also works of art and the like, so that the taste and desire for such things may be cultivated and developed. Settles and easy chairs should be abundantly provided so that the tables and piano may be used only in the way in which they were intended to be used. Rugs, banners, pennants, and pillows would add materially to the tone of the rooms. Plenty of light should be available to make the lounging rooms bright and cheery at all times.

It seems fitting that in our Walker Memorial we assign a room to the Cosmopolitan Club. This club is very active at present and bids fair to be continued so from year to year. A room leading off from the main lounging room, where foreign students could find a small library of books in their mother tongue, and foreign periodicals and newspapers, would be much appreciated. There the members of the club could trim the room with momentos from home, and a most distinctive feature in the memorial would be realized. The room, while being in the hands of the Cosmopolitan Club, must not be closed to others, as it would be of advantage both to the foreigners and to the natives to mingle cordially at all times.

Somewhat apart from the foregoing quarters should be the general library, containing only books of fiction, history and travel. In the library, places should be provided for quiet study and a need now greatly felt should be met by supplying tables or desks and writing materials. Pictures and statuary would add greatly to the enjoyment and value of the library.

A small reception room will be needed on the main floor, near the entrance. The office of the executive or house committee of the memorial should also be located on the main floor. The bowling alleys should properly go in the basement but if the dining rooms take up all the space in that part of the building, then one of the side wings on the first floor should be given over to the game rooms,

where bowling, pool, billiards, cards, chess, checkers and so forth could be enjoyed. There is some difference of opinion as to whether the new "cage" should be located on the first floor or in the basement. The need of a convenient place for distributing mail and purchasing tobacco, etc., is unquestioned.

On the second floor should be the lower portion of the auditorium, capable of holding some three or four hundred people, with balconies to accommodate two or three hundred more. This auditorium should have a good sized stage, some thirty or forty feet in width and from twenty to thirty feet deep, where concerts of the musical clubs and small dramatics could be given. This would also provide a splendid place for the Tech Show rehearsals. It is hoped that facilities will be provided for the removal and storage of seats so that small dances of clubs or fraternities can be held in the auditorium. Such functions as the Junior Prom and Senior Ball should be considered in the design of the gymnasium rather than of the memorial.

On the second floor should be another lounging room for the particular use of the alumni and Faculty, but not exclusively, as one of the strong hopes of the student body is that in the new Walker Memorial, alumni and Faculty, particularly the latter, may be accessible to the undergraduates in a purely social way. A trophy room could be provided on this second floor, and one or two good sized committee rooms. One of these should be furnished with desks or closets where such committees as the Prom committee, the Senior Portfolio committee and the like, could keep records and materials while the committee is in operation.

The next floor should be used exclusively for the offices and rooms of the student activities, except that portion given over to the auditorium. The most important activity of the present undergraduate body is the Institute Committee, and this body should be provided with a special office. This organization represents all the important student activities and its power and scope of work are constantly increasing. The time is not far away when a representative of this committee should be accessible at all times, and the office should be planned to accommodate a stenographer and general record keeper. It would not be necessary to make this room big enough to hold the meetings of the Institute Committee, as one of the large committee rooms on the second floor could be used for this purpose. Arrangements should be made for

a safe and a proper filing cabinet for the use of the Point System committee and the Finance Commission. The room should be well lighted and have an air of business and dignity about it.

The Tech and *Technique* should have two large offices, that of *The Tech* being a particularly large one, as owing to the division of work some separation is really necessary, and the large office would admit of convenient sub-division.

The growing demands of the Tech Show, as far as executive quarters are concerned, necessitates a large office for this activity also. Perhaps one very large room, of say three thousand square feet of floor space could be provided in which the executive offices could be partitioned off and the remainder of the room used for rehearsals and so forth. This same idea could be carried out in the Musical Club quarters, a small office being set aside for the use of the management, and the rest of the room used for the rehearsals of the Glee, Mandolin and Banjo Clubs.

One room might be provided on this floor for the exclusive use of the professional societies, now eight in number, where separate desks or lockers could be arranged for each individual society.

Judging from the present activity of the Technology Christian Association and the service it has rendered the student body during the last year or two in furnishing lunch hour speakers, it should have a private office and should be encouraged to continue its splendid work.

Just one more feature of the memorial from the students' point of view. In the fall and spring, the men like to congregate out of doors, and it seems that some sort of a terrace should be planned in front of the building, overlooking the basin,—as it is the earnest hope of the student body that the memorial will be on the esplanade —where the boys can gather for a smoke and talk. Further—could not the ascent to the terrace or to the main entrance of the memorial, in case there is no terrace built, be the duplication of our present Rogers steps?

H. D. PECK, '13.

ACCOMMODATIONS FOR THE INSTRUCTING STAFF

Desirable Features of Club Life can be made Available to the Instructing Staff in the Walker Memorial, which would thus be a Common Technology Meeting Ground

With the removal of the Institute from its present location, it is obvious that the privileges now enjoyed by many members of the instructing staff in the clubs of Boston must be curtailed to a considerable extent. It is, moreover, highly desirable that certain features of so-called club life should be available for all members of the staff, whether they happen to be members of a city club or not. This need might be met by the organization of an Instructors' Club, with separate quarters of its own, but it is at least doubtful whether such an independent organization could hope to prosper in view of its probably limited use, the proximity of the city clubs in which many members would still find it necessary to maintain their membership, and the probable expense of the maintenance of the new club. Among the institutions from which reports have been obtained, faculty clubs exist only at Columbia and Chicago Universities and the Universities of California and Michigan, and these have a restricted membership. It seems, therefore, to be fitting that the plans for the Walker Memorial should include provisions for the instructing staff, and it is probable that this can be brought about without incurring any considerable or unreasonable added expenditure.

The most obvious needs of the instructing staff could be met by the incorporation in the memorial of what might be termed a lunch club of high grade. This should include restaurant facilities for the serving of meals of good quality and reasonable variety, with capable attendants and neat and attractive (though not elaborate) table appointments. These accommodations should be provided in separate rooms, or through sub-division by partitions of larger rooms, and, in particular, there should be opportunity for small groups (such as members of committees) to lunch or dine by themselves. A ladies' dining room, with separate entrance, would also be highly desirable, although such

a room could, no doubt, be used in common with the alumni, and the students when accompanied by ladies.

Suitable lounging rooms will be as essential as the restaurant, and probably of even greater usefulness. Of these there should be preferably two or three, apart from, but near the general reading room. One of these should be of some size (perhaps 500 square feet in area) and be reserved exclusively for the use of the members of the staff and the alumni. The furnishings should be such as are to be found in well-appointed clubs, and of a character to afford all reasonable comfort, and, especially, to make these rooms a congenial gathering-place.

It is also very desirable that there should be at least one room which could be reserved as a "quiet room" and utilized, on occasion, as a study by members of the staff.

While the quarters which may be thus specially assigned to the use of the alumni and instructors should, in order to fulfill their broad purpose as a substitute for an independent club, be separate from the rooms primarily designed for the use of the students, this should not go so far as to constitute a distinct section of the building, with separate entrance. They should rather be treated as a part of the general scheme of social rooms, merely constituting a group of such rooms assigned for special purposes. As Dean Burton has happily remarked, "seclusion without exclusion" is what is desired. For, since there will probably be no Technology Club at the new site, the Walker Memorial must furnish the opportunity for that desirable intermingling of students and instructors which the Technology Club now supplies in a fair measure and which the present Union was expected to furnish to a larger extent than has been found practicable. It is especially appropriate that a Memorial bearing the name of General Walker should fulfill in its design the desire he expressed on the evening when the Technology Club was first opened, that "in this club a place may be found where members of the instructing staff and undergraduates can meet on the informal basis of club life, and, with possibly the expenditure of a slight amount of tobacco, discuss in a pleasant way questions of vital importance to each." The relation of instructors to students today compares in its pleasant intimacy most favorably with that at most other institutions, and the Walker Memorial must be so designed that there will be no tendency for a separate organ-

ization on the part of the instructors. It must be assumed that they will share freely in the reading and lounging rooms of the students, and in the billiard rooms and bowling alleys.

In case accommodations should not be provided elsewhere, the Walker Memorial should also afford facilities for the Technology Teas held from time to time by the ladies connected with the Corporation and instructing staff, which have become a pleasant and permanent feature of Institute life.

So far as the needs of the staff of instruction can now be foreseen, there would not seem to be a demand for the addition of sleeping rooms for their particular use. The hope may, however, be expressed here that in connection with the general plans for housing students some thought may be given to the possibility of providing quarters for the younger members of the instructing staff during the winter months. The vacated dormitories will naturally supply all needs during the vacation period.

From the Walker Memorial as a social and recreation center, one's thought passes easily to other forms of recreation not necessarily strictly associated with it, and it will be generally conceded that it is quite as important that the instructing staff should be considered in the out-of-door provisions, particularly for tennis and boating, as for the indoor features already suggested. It is desirable, if practicable, that some portion of the tennis courts should be set apart for the use of the instructors, but, in any event, the probability of the general use of the courts by these men should be taken carefully into account when estimating the number of courts required. The last statement applies also to the gymnasium facilities in general, including squash courts, and the like. On the other hand, it is imperative that a reasonable number of baths should be reserved for the exclusive use of the instructors.

It is, of course, plain that the special provisions for the Faculty and other instructors enumerated in the foregoing paragraphs must entail some added initial expense and increase the cost of maintenance. This should obviously be met by the payment of such dues as shall afford a reasonable return for the privileges afforded, and the expense of special features, such as tennis and boating, should probably be borne by those specially benefiting from them. Such charges need not be burdensome to even the junior members of the staff.

WALKER MEMORIAL AND THE ALUMNI

It Should Be in Effect a First Class Club, the center of the social life of the New Technology, and the Mecca of the returning alumnus

The Walker Memorial, while primarily and predominantly an undergraduate institution, may at the same time well serve certain useful purposes for the alumni who inspired it and have so generously provided a fund to build it, and who wish to see in it a fitting memorial to General Walker.

An alumnus coming back to visit Tech, wishes for the time to be again a Tech man, to be one of the boys and learn the Tech life of today. For this reason, in my opinion, no special alumni quarters need be provided, save possibly some small, comfortable room in which a few congenial spirits might meet to talk over Tech matters.

The Walker Memorial should be a Tech club in the highest sense and built and managed as a first-class club and made to be the great social center for the new Tech life.

All of the alumni should be associate members of the club, paying no dues, but entitled to all privileges except credit accounts. They should, however, be invited to become active members, paying a small annual due, and such members should be entitled to all privileges. In this way the alumni could help maintain the club and the Institute would get some help towards defraying the considerable expense which will be necessary to properly maintain this institution.

As to a proper memorial: The building should have a large meeting room, for student gatherings, a reading room, a large dining room and a sufficient number of private dining rooms of varying dimensions, which rooms can be used, if required, for small meetings, a billiard room, and a swimming tank. It might be desirable to have a small number of sleeping rooms, which would be available for visiting alumni.

This arrangement eliminates the gymnasium, which we have

always considered as a part of the Walker Memorial, but inasmuch as we are building a new Tech in its entirety, in my opinion the gymnasium and all athletic activities should be in other buildings and locations. The Walker Memorial should be the *center piece* of the whole scheme, while the gymnasium must necessarily be near the athletic field—the Tech Stadium—all of which must be in the other end of the grounds.

The alumni look to the Corporation to properly locate and build a Walker Memorial worthy of their respect and love for the man whose name they seek to honor.

JAMES W. ROLLINS,^{78.}

Tech Men in Foreign Lands

The *Register of Former Students*, recently published, shows that 436 Technology men are settled in foreign lands. Two hundred and seventy of them are in other countries of North America, about 40 in South America, 43 in Asia, 6 in Africa, 5 in Australia and more than 70 in Europe, about fifteen countries sharing them. The North American men are largely in Canada (157) and Mexico (82). In South America it is Brazil which leads with 14 former students, Chile and Argentine having 6 and 5, respectively. In Africa four are in the Transvaal and one each in Egypt and the Sudan, while in Asia, from the fact that students from western countries are but now beginning to come, the past students and graduates are from China (17), Japan (16) with 1 from Korea and 7 from India.

New York Club-House

The Board of Governors of the Technology Club of New York is now preparing the annual list of membership in a new form. It will be a business directory containing a list of all the members of the club arranged alphabetically, geographically, and by classes, giving their address, their business, position, occupation and briefly, what they manufacture, sell, or do. In this way every member will have an easy method of finding a club member in any line of business or in any location of the United States. Two hundred non-resident members have joined the club we believe on the strength of this plan, and it is hoped that it will prove a most valuable list for every club member.

A SURVEY OF OTHER INSTITUTIONS

Accommodations Furnished by other Colleges and Universities for the Social Needs of Students, as suggestions for our own problems

During the past summer, it was my good fortune to be one of four emissaries sent out by Mr. J. R. Freeman, '76, to visit leading universities and colleges with a view to obtaining all possible information and data relative to the best layouts, interior arrangements and building construction of these educational groups.

The social life of the undergraduates at these schools and the provisions made for supplying them with suitable accommodations for their social and physical needs, were closely studied and special reports were transmitted to the Walker Memorial Committee.

Of the thirty-two schools visited only ten had provided suitable club houses for their students. These were: Ohio, Pennsylvania, Brown, Harvard, Chicago, Michigan, Yale, McGill, Toronto and Dartmouth. Only the first four have erected student club houses comparable with our proposed Walker Memorial. Nearly all of them, however, contained valuable features worthy of incorporation in our plans.

The Ohio State Union was completed in 1910 at a cost of \$100,000. It provides for two thousand students, and is well planned throughout. The broad and spacious terrace facing the campus is its notable feature, and proves a most popular rendezvous during the evenings of the fall and spring. The large lounging room, overlooking this terrace, is very attractive in its appointments, as its ceiling is beamed and an immense fireplace adorns one side of the room. The dining room, in the basement, is very successful, the prices charged here being higher than at the lunch counter which also finds a place in the building. Altogether it approaches nearest my conception of what the Walker Memorial should be, both in regard to the number of students accommodated and in the apportionment of space for specific purposes.

At Pennsylvania, Houston Hall, erected in memory of one of



Houston Hall—University of Pennsylvania



Union—Ohio State University

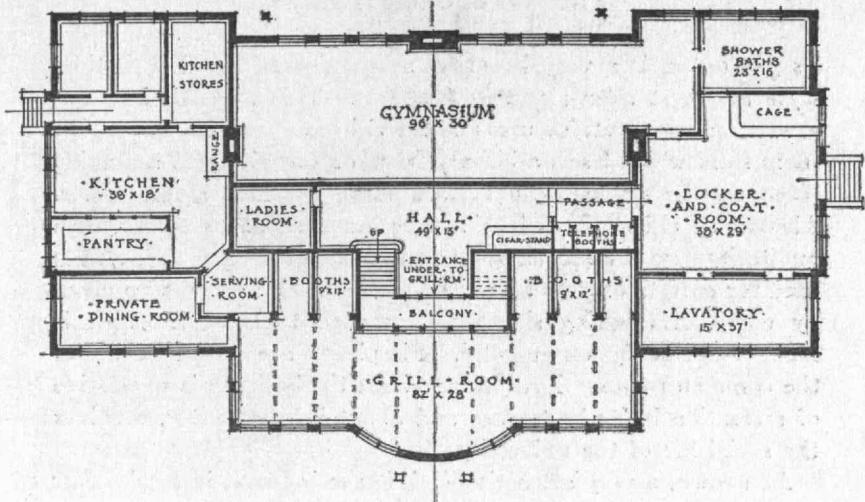


Harvard Union



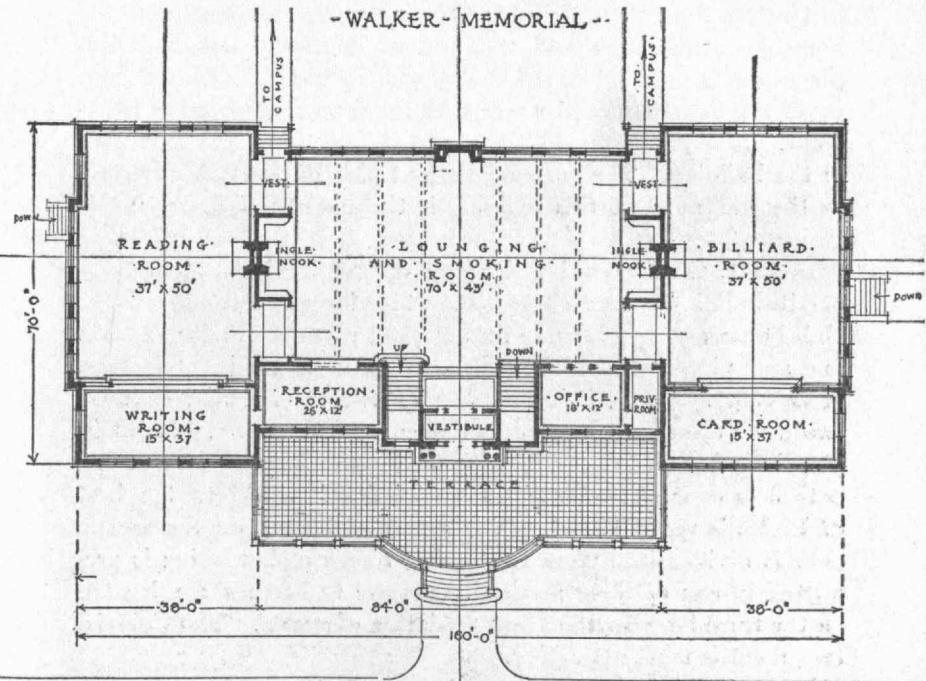
Rockefeller Hall—Brown University

-WALKER - MEMORIAL -



• BASEMENT • PLAN •

-WALKER - MEMORIAL -



• FIRST • FLOOR • PLAN

THE - ESPLANADE

A PLAN FOR THE WALKER MEMORIAL

(Prepared for the Alumni Committee)

its graduates, is a very beautiful adaptation of the Elizabethan style and cost approximately \$150,000. This building also has a terrace as one of its features and the visitor enters a large lounging room from which leads a billiard room on one side and a reading room on the other. The billiard room contains seven tables. Alcoves at either side of this room serve as game rooms. An auditorium on the second floor seats four hundred people and is used for entertainments and small dances such as might be given by clubs. Its ceiling shows the exposed truss work which is made exceedingly ornamental. Fireplaces are found in all of the common rooms. Everything about the building is suggestive of recreation in its best sense and about it as a center, revolves the social life of the university.

At Brown, a very attractive club house is found in Rockefeller Hall. Its cost was \$100,000. The terrace feature is found here also and commands a view of the entire campus. The building is treated throughout in the Colonial style which adds to its homelike atmosphere and the various delicately designed fireplaces are immensely decorative as well as useful. Oriental rugs cover the floors and add warmth to the interior decorative treatment. A large trophy hall occupies the center of the first floor of the building. The successful adaptation of the Colonial style to the treatment of this building is the essential feature of this Union.

In 1901, the Harvard Union was opened to the student body and its building-cost was \$150,000. It is a large and well-appointed club house and has become an accepted place for undergraduate and alumni gatherings. The living room is its dominant feature. It is very spacious, being carried up two stories, and contains two large open hearths at opposite ends of the room. Its walls, panelled with oak, are hung with portraits. The grill room has both *à la carte* and *table d'hôte* service and is equal to the best of Boston's restaurants. A well-arranged library on the second floor is divided into three connecting rooms and smoking is permitted in one of these sections. Several bed-rooms are located on the third floor for the accommodation of guests. The Colonial treatment is most attractive.

While these club houses are most similar to the one being planned for Technology, a word or two about the others may not be amiss.

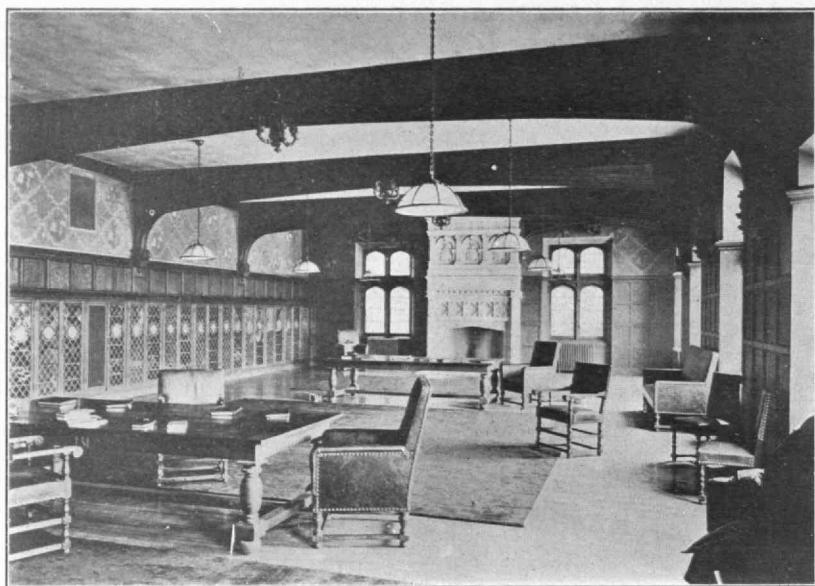
At Chicago, the Reynolds Club is worthy of praise. It is not in



Lounging Room—University of Chicago



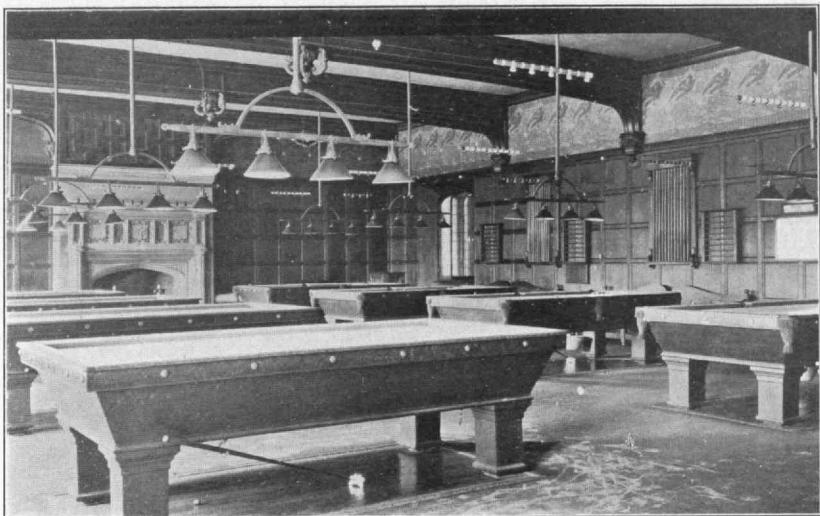
Lounging Room—Brown University



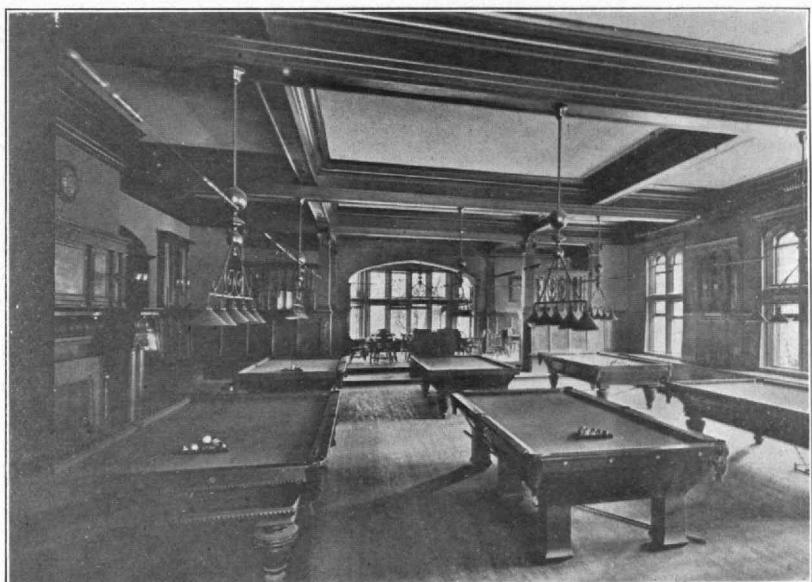
Library—University of Chicago



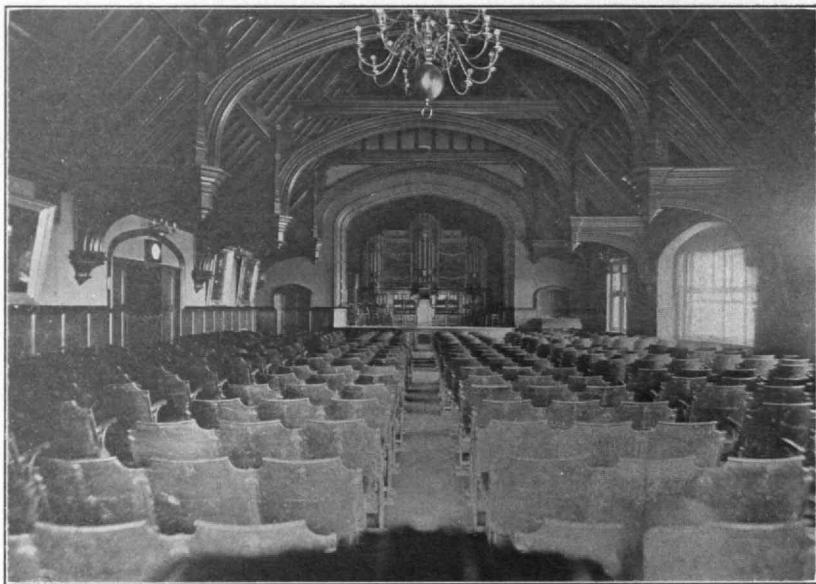
Dining Room—Ohio State University



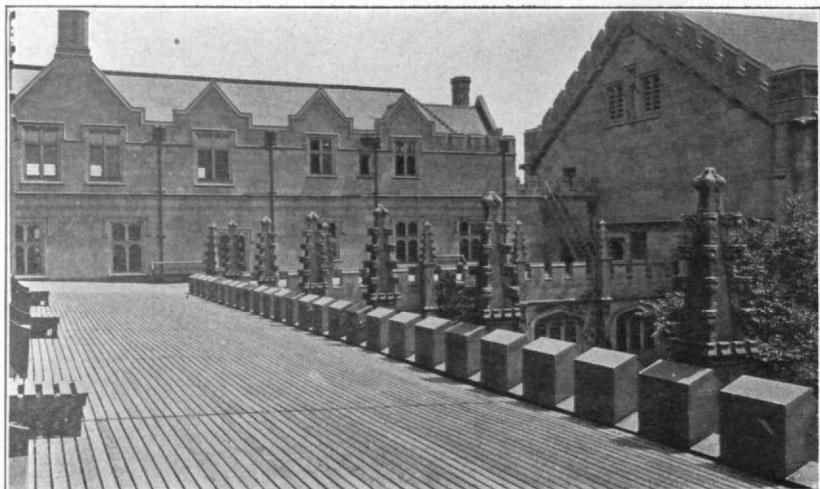
Billiard Room—University of Chicago



Billiard Room—University of Pennsylvania

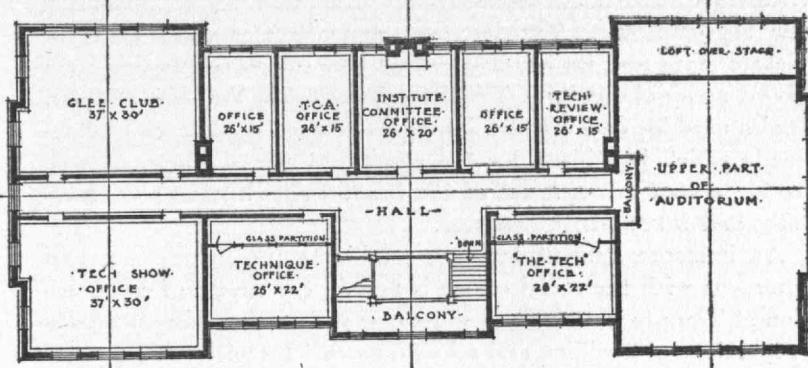


Auditorium—University of Pennsylvania



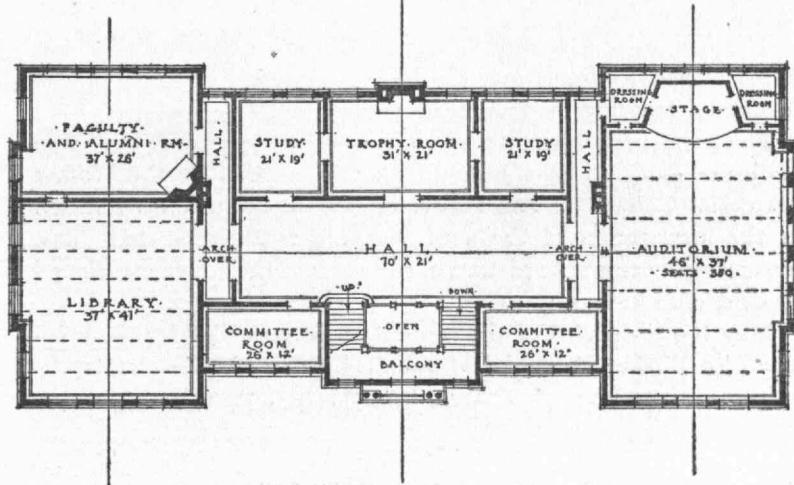
Roof Promenade—University of Chicago

-WALKER - MEMORIAL-



THIRD FLOOR PLAN

-WALKER - MEMORIAL-



SECOND FLOOR PLAN

A PLAN FOR THE WALKER MEMORIAL

(Prepared for the Alumni Committee)

a separate building but forms a part of a connected group including the big commons. The lounging room here is treated in the Gothic style and its beamed ceiling and carved stone fireplaces give it an air of dignity. The library, treated in the same manner, is also used for dancing and its windows open upon a roof promenade which is utilized for the serving of refreshments, as well as for a roof garden. All of the interior appointments are carefully and intelligently designed.

An immense student building combining the gymnasium and commons with the social center is now in the course of construction at Toronto University and its cost will assume the enormous proportions of a million and a half dollars. Its noticeable departure from the usual is the introduction of an interior court or quadrangle about which the building is built.

At the University of Michigan, the present Union has been long outgrown and plans are under way for a new Union to cost \$600,000, together with \$150,000 for furnishings and \$250,000 for an endowment fund. Elaborate plans have been drawn up which include nothing unusual except an immense dormitory for alumni on the top floor capable of accommodating one hundred and five people.

The Unions at Dartmouth and McGill are well adapted to the needs of those schools and the large auditorium included in the Memorial building at Yale is its most interesting feature.

Thus the best examples of club house arrangement for large bodies of students have been thoroughly covered by the Walker Memorial Committee and this comprehensive study has resulted in the preparation of the accompanying tentative sketch-plans, presenting a composite picture of the plans of the above mentioned student club houses.

May the endeavors of the committee be rewarded by the erection of a Walker Memorial, unequalled by any in the country.

HAROLD E. KEBBON, '12.

WHAT THE NEW GYMNASIUM SHOULD BE

General accomodation for all forms of physical development to be afforded in a gymnasium especially designed for the needs of Technology Students

It is the popular impression that college authorities permit their students to spend altogether too much time in physical recreation, with consequent diversion from class-room work and study. Whether this be true or not, the Institute of Technology has always found it impracticable to indulge its students along these lines. The Advisory Council on Athletics has long since seen the folly of trying to carry on athletics at the Institute in the ordinary collegiate way. During its eighteen years of existence its policy has gradually resolved itself into the encouragement of the plan of interclass and intramural sports. Track athletics and hockey constitute our only intercollegiate contests, and it is not our aim to train our men as champion athletes, but to teach young men how best to develop their bodies and how to maintain a high standard of physical energy. In other words, we favor a course in physical education, a course which promotes the student's best mental attainment and without which his years of study at the Institute may be of little avail.

With the laying out of the new Technology, ample provision should be made for the physical education of our students. No higher result can be attained by our graduates than to be mentally and physically equipped for the struggle before them. How fitting, then, is the discussion and completion of plans which shall provide for our students ample opportunity for physical growth and development. To this end it is important that the residential section of the new Technology shall be quite near an athletic field of ample dimensions. At each end of this field it is suggested that two prominent buildings be located, one the Walker Memorial, the other the gymnasium.

In trying to profit by the experience of others in planning our gymnasium, one thing stands out prominently, namely: that the majority of the gymnasiums have fallen short of their best results

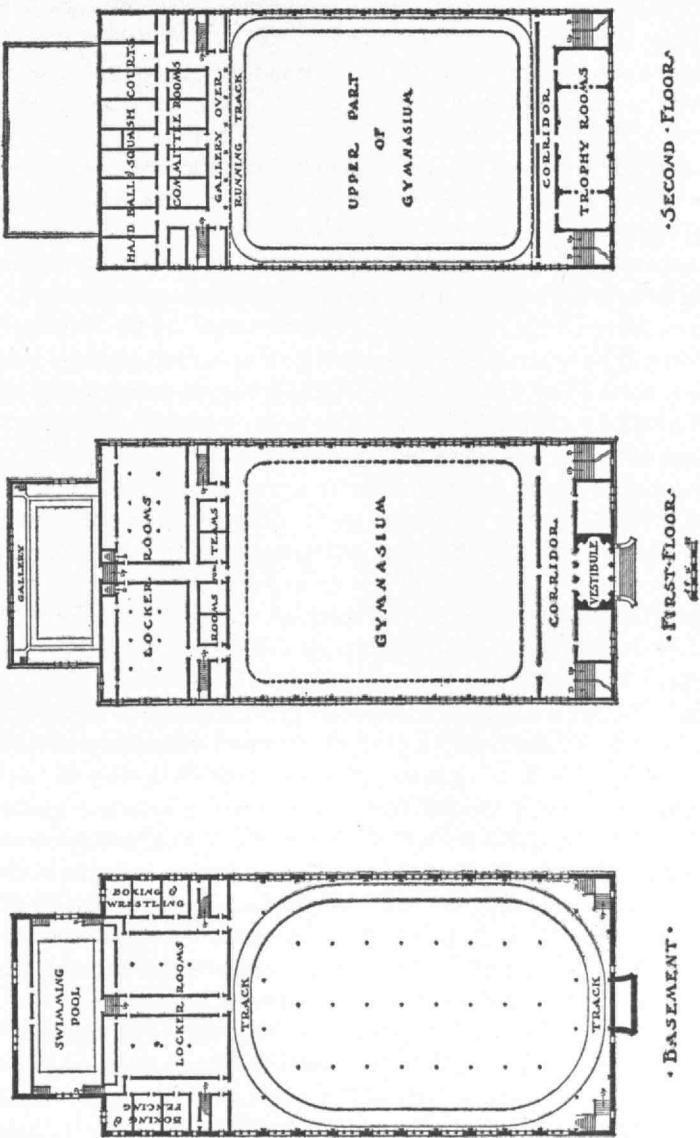
in not furnishing adequate facilities for future growth. The new Technology, with its segregation of students, will require generous accommodations for all physical development, whether it be in the form of games or track athletics, or whether it follows exercise in a gymnasium with abundant up-to-date apparatus. It must build generously and with a view to future demands.

The building should be 150 by 300 feet, naturally conforming in its architectural lines to the general scheme. The greater part of the ground floor should be of cinders and clay in such proportions as to insure good footing for such forms of exercise as running, jumping, pole vaulting, tennis, squash courts and hand ball. A cinder-track fourteen feet wide should be laid out just within the walls, allowing ample opportunity for indoor running during inclement weather. One third of this ground floor should have locker accommodations and shower baths. The lighting for this section of the building should be ample, with windows so adjusted that by easy mechanical manipulation this whole section can be thrown wide open.

Above this, the first floor should be reached by broad steps leading directly into a large corridor extending across the entire front of the building (150 feet) and at least 75 feet deep. From this corridor should open office rooms for the medical director, check rooms, reception rooms, and a library; stairways should lead from the extreme right and left to the mezzanine floor. From the center of this lower hallway large swinging doors should open into the main gymnasium floor.

This main exercising room should be at least 100 by 150 feet, and should contain the best possible equipment, including at least four sets of heavy floor apparatus, with horses, bucks, parallel bars, horizontal bars, vaulting bars, spring boards, flying rings, traveling rings, climbing ropes, jumping stands, as well as chest weights, medicine balls, dumb-bells, wands, Indian clubs and mats. The above enumerated apparatus would cost \$4,000. A suspended running track, at least twelve feet from the floor, should surround this room, accessible by winding stairways at the corners of the room. This track should be banked and covered with cork linoleum. This large exercise room should extend through the mezzanine floor to the roof. The windows should be so planned that they will not only supply ample light, but admit a free circulation of air. These windows should be at least six feet above

A PLAN FOR THE GYMNASIUM
 (Prepared for the Alumni Committee)



the floor in order to give sufficient wall space for apparatus. They should be numerous enough to obviate any need of skylights with their inevitable tendency to leak.

Above the entrance corridor, approached by stairways at each end, will be found the trophy room and a gallery overlooking the gymnasium floor.

At the other end of the main gymnasium floor will be found locker rooms, shower baths, wrestling rooms, boxing and fencing rooms; also a special room for corrective gymnastics, supplied with apparatus adapted to the requirements necessary for overcoming deformities of one or another description.

Above these rooms, corresponding in elevation to the entrance corridor will be quarters for the managers of athletic teams, and dressing rooms for visiting teams, examining rooms, etc. The building will have at this end suitable exits, corresponding in appearance with the entrances before mentioned.

Adjoining the gymnasium, either in a contiguous or a separate building, should be the swimming pool. The necessity for such a building is obvious. In this day and generation everyone should know how to swim. Especially is it true of men who have selected outdoor professions, whether on land or water. We believe it should be a rule at the Institute, as at some of the universities, that every freshman must learn to swim.

This building, if separated from the gymnasium, will cover an area of 100 by 60 feet, with a pool of standard dimensions, 75 by 30 feet. The depth of water would vary from nine feet at one extremity to four and one half feet at the other. Entrance to the pool should be from the center of its four sides, and enough floor space at its edges to allow of easy passing. At one end adequate space must be provided for a "run" before diving or fancy tumbling. All this construction is to be of tile and a gallery surrounding the entire tank should be some fourteen feet above the edge of the pool and have a seating capacity for several hundred.

The water will be filtered in on one long side and taken off on the opposite side by skimming weirs at the surface. It will be changed entirely every forty-eight hours and the temperature kept at 74° during the winter months. A sludge pit in the bottom will facilitate cleaning. The pool is to be sterilized by the addition of hypochlorite of calcium or soda in the proportion of ten pounds to a million gallons of water. Suitable showers and locker

rooms, Turkish bath rooms and lounging rooms will be provided for, and the purity of the pool will be maintained not only by the foregoing devices and regulations, but by requiring that a shower bath be taken before entering the pool, and that no clothing whatever be worn in the pool. An instructor in swimming, or his assistant, will always be in attendance as a precaution against accident. The building should be of the best construction, amply lighted, and kept scrupulously clean.

A gymnasium as above described would cost about \$225,000, and a swimming pool, about \$75,000.

The consummation of these plans, to give our student-body physical stamina and intelligent protection against the ravages incident to our modern civilization, depends upon and deserves the generous support of our fellow-alumni.

J. ARNOLD ROCKWELL, '96.

Result of Annual Election

The recent annual ballot of the Alumni Association resulted in the election of the following officers for 1913: president, Frederic H. Fay, '93; vice-president, for two years, William H. King, '94; secretary-treasurer, Walter Humphreys, '97; executive committee, for two years, Merton L. Emerson, '04, and Jasper Whiting, '89; representatives-at-large, for two years, Arthur C. Anthony, '86; Louis K. Rourke, '95; Thomas E. Sears, '03; W. Lyman Underwood, '98; Luther K. Yoder, '95. The following have been elected to represent their respective classes on the Council for five years: '69, Howard A. Carson; '74, George H. Barrus; '79, Edwin C. Miller; '84, Harry W. Tyler; '89, Henry Howard; '94, Samuel C. Prescott; '99, Hervey J. Skinner; '04, Merton L. Emerson; '09, Carl Gram; and '12, for two years, Randall Cremer. According to custom these officers will assume their positions at the close of the annual banquet on January 18.

Messrs. Cass Gilbert, Charles Hayden, and Charles T. Main were nominated for term membership on the Corporation.

OUT-OF-DOOR ATHLETICS

Provisions for Open-Air Exercise to be along the lines of best physical development—Arrangement of Athletic Field and Tennis Courts

A most important feature of the provision for physical welfare of students in the new Technology will be the arrangement for out-of-door athletics. The trend of physical exercise is more and more toward work in the open air. The popularity of tennis, golf, walking, hare and hounds, cross-country running, and light track exercise continually increases. The climate in this section has shown of late a tendency toward less rigorous winters and gives ample opportunity for outdoor work. The latter is also far more attractive to the average participant, than gymnasium exercise. This fall there were regularly at the Field a daily average of one hundred men and the policy of the Advisory Council has steadily been to attract men toward light forms of running, etc.

At the Institute, "varsity" football and baseball are not deemed feasible, and financial provision must be made for the future maintenance of athletics in all its branches. With the increased interest expected at Cambridge, the annual expense will be largely increased; in fact today it is impossible to continue athletic exercises, even in their present limited scale, except by financial support from the Corporation.

The Athletic Field will probably be laid out in general like the present track at Brookline. A rather elongated oval, similar to the Harvard Stadium track, seems impracticable in the space likely to be available. The ideal plan would be a quarter-mile track having one large curve with both start and finish on a straightaway, in fact, a "U" track. Possibly this result may be accomplished on further consideration. On the field will be paths and pits for the jumping and vaulting and for the weight events. There will also be a football field inside the track. It is desirable to put in at least one baseball diamond with sufficient room for the outfield. A baseball diamond is laid out on the Brookline field, but it has proved somewhat unsatisfactory in practice as it endangers both

the baseball players and the track or field event men, who may be working at the same time.

The cost to grade and build a track and football field, including drainage, waterpiping for sprinkling track, etc., is estimated at \$10,000. This does not include any provision for enclosing the field or spectators' stands. Provision should be made for seating at least four to five thousand people. The ground must necessarily be enclosed, and it is suggested that a wall be built on the west side and the north and south ends, and that this wall constitute the backing of the tiers of seats. It should be of concrete construction. The cost of providing such a grandstand will probably be between forty and fifty thousand dollars.

Many tennis courts are planned adjacent to the dormitories, yet further provision will be needful.

F. H. BRIGGS, '81.

Institute Committee and the Tech

Last month announcement was made by the management of *The Tech* that because of the small number of men who came out for editorial work it was impossible to continue the paper. The publication was suspended for a week. The Institute committee immediately made an investigation and as a result secured the interest of a large number of the undergraduates. The management of *The Tech* realizing that without the direct support of the Institute committee this condition would be likely to be repeated have asked the Institute committee to act in the same capacity toward *The Tech* as it now does toward the Tech Show. A special committee of the Institute committee is now at work formulating a plan of coöperation and an advisory board has been appointed. The Institute committee is now directly responsible for the Tech Show, *The Tech*, the finance commission, the point system, the musical clubs and the Union committees.

THE NEW TECHNOLOGY DINING ROOMS

Planning for a refectory service on a high plane of excellence.

Surroundings are to be attractive and features of best restaurants to be employed

The question of dining accommodations presents many difficult and puzzling problems—problems in which the experience of other institutions furnishes conflicting suggestions, owing undoubtedly to peculiar conditions which govern in the different cases. We must, therefore, depend largely upon the study of our own local needs.

As in the student houses it is desirable to foster the intimacies that are attained through breaking up into small groups, so, in the matter of providing accommodations for dining, it is wise to plan, in part at least, for similar grouping. At the same time, the meal hour furnishes an excellent opportunity for that general bringing together of the body of students which too great segregation into special groups might destroy. There should be, therefore, a central building, or commons hall, with rooms for groups of varied size, yet so intimately related that a natural mixing would result. There should be, not only several relatively large rooms, but also numerous smaller, closely connecting rooms, possibly some of them more properly alcoves, providing for special meetings of varying numbers. It is particularly desirable that this meal-time association should include, not only the student body, but also, so far as is possible, members of the instructing staff, alumni and visitors. While it is hoped that the central dining group will provide accommodations satisfactory to all, should separate accommodations be required for special groups, societies, or fraternities, provision might be made for them by a slight modification in the arrangement of some of the dormitories. To some extent these special requirements should be met by the facilities afforded in the Walker Memorial building. The Walker Memorial building should be near by, if not directly connected with the commons hall, so that its lounging room and special features might be close at hand for the

few minutes' leisure just before or just after meals. This proximity would quite likely make possible the use of the "commons" kitchen for the needs of the Walker Memorial. It has been suggested that, without detriment to the architectural features of the buildings, some form of continuous covered passageway might be provided, which would serve, not only to bring the various student houses into more intimate relations, but also to furnish for all an attractive and easy access to the commons hall and Walker Memorial. Such an intimate connection between dormitories, or staircases, and the central dining room would enable fraternities, clubs, or other groups, desiring separate table accommodations, to secure the privilege without the added expense of maintaining separate kitchens and dining rooms, and, at the same time, would enable such organizations to contribute their part to the more frequent bringing together of all.

The commons should provide service of the following types:
Board by the week at not over \$5.00.

Table d'hôte of good quality, but of low cost by reason of simple service.

Lunch counter, or cafeteria.

Accommodations for students who bring lunches.

The last named might include gas heating appliances for warming drinks, and, perhaps, provision for the preparation of the simplest dishes, and should be near the lunch counter, facilitating purchases therefrom to supplement the home-prepared lunch.

In the varied types of service there should be constantly kept in mind duplication of the home table and environment, in so far as this can be attained with proper regard for economical operation.

Taking as a basis a student population of 2,000, the requirements for the different types of service may be estimated as follows:

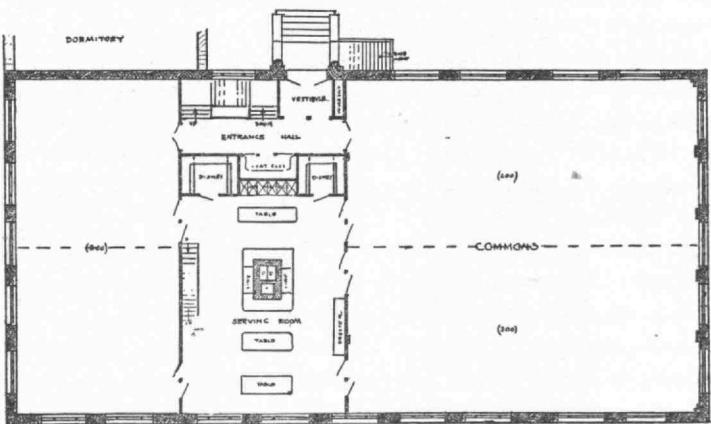
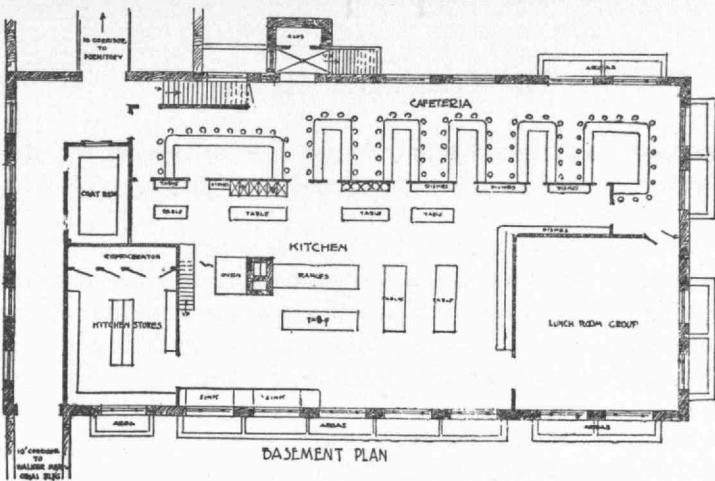
1. <i>Table d'hôte</i> service on the basis of 20c and 25c luncheons, including 200 in small rooms or alcoves for special tables, societies, committees, etc.....	900
2. Cafeteria or lunch counter.....	350
3. Accommodations for those bringing lunches.....	250
4. Lunching elsewhere, off the campus or in the Walker Mem- orial.....	500

The building should have about 10,000 square feet of ground area with a basement and two floors above. It should be simple in

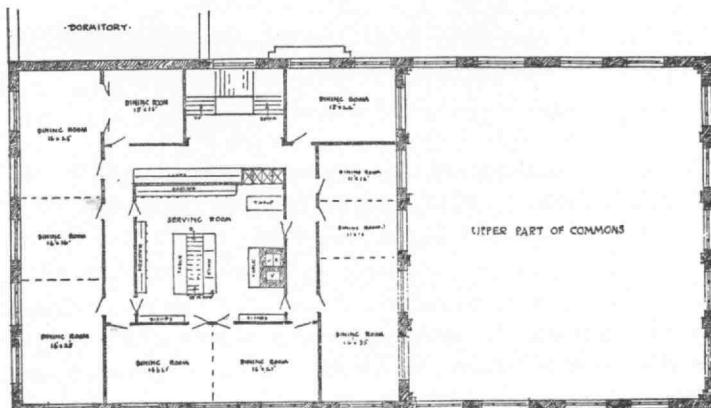
design and equipment, every effort being made to provide a home-like atmosphere. It is estimated that a suitable building might be erected for \$150,000. The kitchen and storage would occupy one half of the basement; the lunch counter, cafeteria, and room for those bringing lunches the remainder. The entire first floor would be occupied by the larger main dining rooms, with a serving room centrally located. The second floor would contain numerous smaller rooms of varying sizes. The main dining rooms on the first floor, perhaps three in number, each accommodating 200, should be arranged to permit of use in combination, providing for alumni dinners, society meetings, etc. In the second floor rooms, or by sub-dividing the main dining rooms, the requirements of the somewhat smaller gatherings of from seventy five to one hundred could be easily met. The larger rooms should be designed for convenient sub-division by screens, or special partitions, to be rolled out of the way when not required. This would also assist in reducing the noise and confusion of the large dining hall.

There should be a number of small rooms, or alcoves, that could be quite completely cut off from the main halls; at least six, seating not over twelve each, and eight accommodating from twelve to twenty each. These rooms should be arranged in groups and so constructed that they might be conveniently combined to accommodate parties of varying numbers.

Every effort should be made to provide service which will preclude the necessity of the students going off the grounds for their meals. It is assumed that the luncheon service establishes the maximum requirements and that the question of relative accommodations for the other meals is a detail principally of administration having less important connection with the physical requirements. For this midday meal, taxing the seating capacity to the greatest extent, no effort should be made for special grouping, but for the dinner at night special provision should be made, separate tables provided, and every encouragement offered for the gathering of students in small groups, having some common interest, as, for example, the various engineering societies, the different clubs, athletic groups, etc. Such grouping in the larger dining room, as well as in the connecting smaller rooms, while serving to foster the very desirable intimate relations, at the same time, because of the close relation between the rooms, will not prevent the equally desirable general association. Music for the principal meal, at



- FIRST FLOOR PLAN -



- SECOND FLOOR PLAN -

least occasionally, would supply an added attraction for this student gathering, and, as has been suggested, might be supplied by the various musical clubs.

While the constant changes in the student body make it inadvisable to place on the students the entire administration, it seems reasonable to depend on them for the general regulation of the dining room, and their responsibility should be extended as far as is possible. The employment is suggested of a high grade man as a director, who should have ability, not only to administer the department, but also, so far as is needful, to instruct the students in such affairs. It is possible that the same officer might also be charged with the general supervision of the dormitories. Such a director might very properly be a member of the Faculty. Under his direction should be placed the store from which the various departments of the dining-room service would be supplied, and included in his charge might also be the general coöperative store. It is thought that the running expenses, supplies, pay-roll, renewals of equipment, etc., indeed all expense save interest on the cost of the building, should be met by the charges for meals and service.

In conclusion, then, the dining-room service presents certain requirements to be met, and affords certain contributions to student life, which may be summarized as follows:

1. Good, wholesome fare at minimum cost, and service as attractive and varied as may be had elsewhere.
2. A reproduction, so far as is possible, of home conditions in service and general surroundings.
3. Dining rooms so arranged as to foster the intimacies and home atmosphere of the small table, and at the same time to insure the important general bringing together.
4. Provision for very large gatherings by arrangement of larger halls to permit of their convenient use in combination.
5. Provision for such service as may be required in the Walker Memorial.
6. Student management, at least supervision, which will encourage interest, and, at the same time, afford valuable experience.
7. Administration in charge of a competent director and teacher.

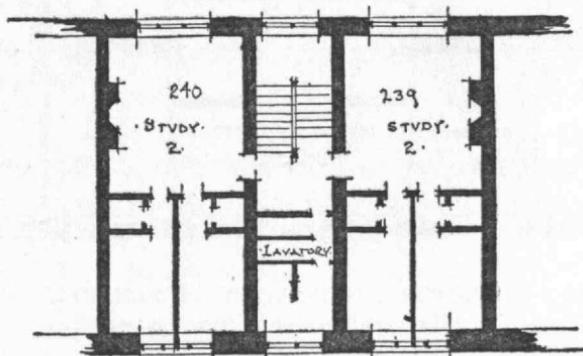
FRANK L. LOCKE, '86.

A PLAN FOR STUDENT HOUSING

Careful study being given to a proposed dormitory section that will afford a homelike atmosphere and surroundings—What other institutions have done

"Experience is the name we give our mistakes." The character and size of the problems confronting the Institute in connection with the housing of students after moving to the new site may be partially realized by considering the significance of this maxim. We have made no mistakes but we have had no experience. It is always difficult to profit by the experience of others. The best effort possible will be made to do so in solving the student-hous-

(South)



HOPKINSON DORMITORY, UNIVERSITY OF PENNSYLVANIA
(A typical second floor plan.) Scale 1 in. = 20 ft.

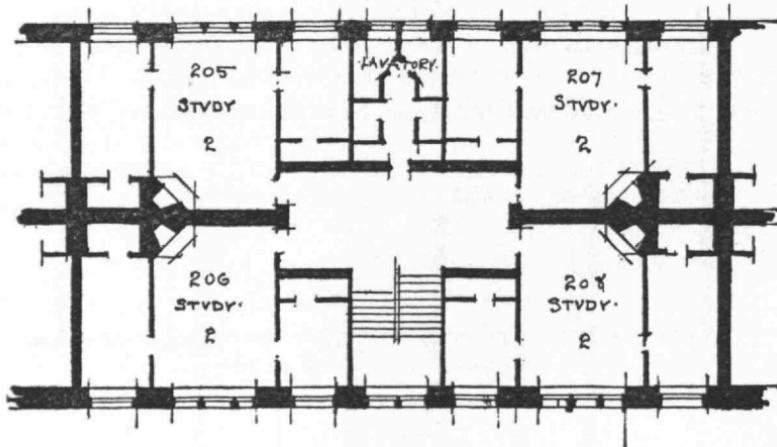
ing problem, but the location of the Institute, the character of its students and its own particular ideals establish conditions which the experience of other colleges may not help us to handle with certainty. There is no feature of the whole building problem which presents such untried possibilities. It is an entirely new field, and only in entering upon it can we get experience. We shall make mistakes; let us try to make them as few and small as possible.

The problem is how best to arrange for the home life of those students who do not live with their parents in such a way as may

best bring moral and physical healthfulness to the student body and thereby promote good scholarship. The average undergraduate at Technology is rather serious-minded and earnest but immature. Intermingling with his fellow-students should be encouraged, but not to the point of interference with proper application to study. Opportunities for regular, healthful exercise should be provided near at hand and outdoors as far as the climate may permit.

There is certainly more hope of attaining these ideals through provision on the new site, thus bringing student life directly under the supervision of the Institute authorities, than through

(South)



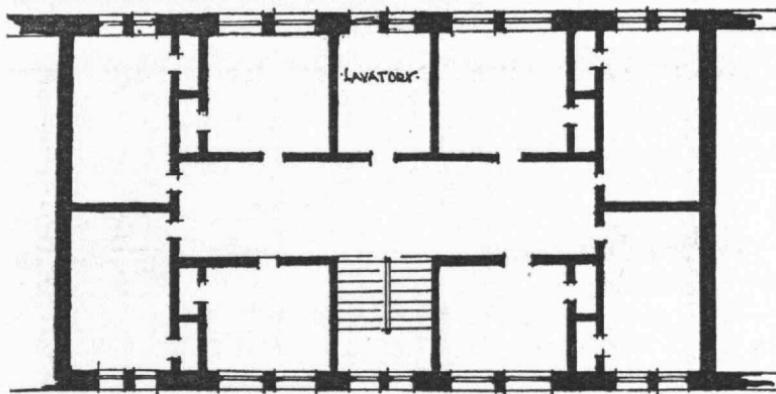
LEIDY DORMITORY, UNIVERSITY OF PENNSYLVANIA
(A typical second floor plan.) Scale 1 in. = 20 ft.

provision outside of the Institute grounds in houses necessarily removed from the general social and athletic activities of the student body, and erected primarily for profit. It is clear that provision should be made on Institute property, in fact, upon the new site itself, for as many as possible of those undergraduates who do not live with their parents.

Such a plan would not require the conduct of student houses upon a military basis. The experience of the Institute in connection with the social life of its students is distinctly favorable to student government. As far as possible, therefore, whatever rules may be established for the conduct of our dormitories should be left to the undergraduates themselves, not only to define but to

enforce; thus directly appealing to the manliness and honor of the individual and developing respect for the rights of others.

Answers to *some* of the physical problems involved are perfectly clear from the experience of other institutions. Our student houses should *not* be large structures built on the hotel or large unit plan with one or two main entrances only, for three or four hundred men; they *should* be of the "stairway" or small unit type with separate entrances and other accommodations specially arranged for groups of twenty to forty students, thus insuring the advantages resulting from the intimacy of small groups and



A SKETCH FOR AN ARRANGEMENT OF ROOMS FOR STUDENTS LIVING ALONE

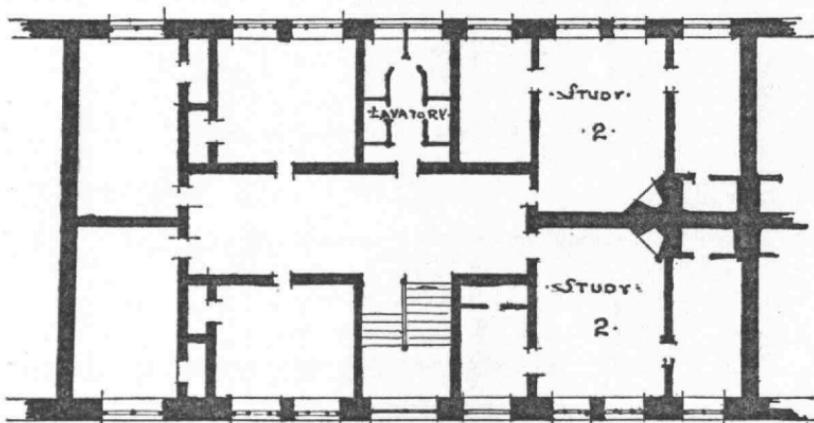
(Second floor plan.) Scale 1 in. = 20 ft.

avoiding the individual loneliness and "rough-housing" of large groups. Practically all the most successful college dormitories of today are built upon this plan, as for instance, at the University of Pennsylvania in Philadelphia, where the location of the university and the character of its men very much resemble our own. There these sectional dormitories are built around quadrangles or "quads" and are mostly five stories high, the fifth story being built into the roof. At Columbia, on the other hand, two large dormitories each accommodating 225 men have been built on the "hotel" plan.

The resources of those students who do not live with their parents and, hence, probably come from a distance, are about the same as the resources of undergraduates at most of the eastern

classical colleges and it may be assumed that the student accommodations at such colleges would closely represent the demands of our own students. It is important, however, that our dormitories should give a reasonable range of opportunity to suit individual tastes and needs, but this range should be in the size and possibly the location of rooms but not in service, which should be uniform throughout in order to insure an atmosphere of equality. Cleanliness and order should be the first requirements of the service provided.

There are several possible locations for dormitories on the new site. Wherever placed, however, they should be near the buildings



A SKETCH FOR A GROUP OF FOUR SINGLE ROOMS AND FOUR ROOMS WITH CONNECTING STUDIES

(Second floor plan.) Scale 1 in. = 20 ft.

and grounds provided for other student interests outside of the educational; they should be near the athletic field, but not necessarily bordering upon it; near the gymnasium and the Walker Memorial but not necessarily adjoining. They should adjoin or be very close to the dining hall or "commons." Preferably they should be on the Esplanade or on the interior of the lot and not bordering upon the public streets, such as Massachusetts Avenue.

The artistic or architectural features of the student-housing problem should not be overlooked. Architectural attractiveness, both inside and outside, has an important influence for good upon the student mind. If rightly designed, our dormitories should inspire besides an appreciation and admiration for the beautiful

in art and architecture, a love of Institute life, and loyalty to all things Technology.

There are two questions involved in this problem which are not conclusively answered in the experience of other institutions, namely: (1) Whether any dining accommodations should be within the dormitories or confined entirely to a "commons." (2) Whether each "stairway" should have a common "lounge" or living room. Individual dining rooms would help in creating a homelike social atmosphere but would not provide the benefits resulting from daily gatherings of the general student body in a "commons." Food and service in a "commons" should be both better and less costly. In so far as a "stairway" will be used somewhat as a club house, a "lounge" would be desirable. Most dormitories of the "stairway" type are built without common living rooms, however, and to provide them in our plans might detract from the full and more beneficial use of the Walker Memorial. Perhaps a solution of this question from both social and scholarship viewpoints might be the omission of all separate study rooms, providing simply single and double sleeping rooms with a fairly large and attractive living room for each "stairway" where, through regulation or custom, most of the calling and gathering for social purposes in each "stairway" would occur. Further light or suggestion regarding either of these questions would be very helpful.

In round figures the present number of students at Technology is 1600. Of these 700, or 44 per cent. live at home, leaving 900, or 56 per cent. who should receive consideration (though not necessarily provided with dormitories) in our student-housing plans. At present about one quarter of those students who do not live at home are living in fraternity houses. There are about one hundred members of the instructing staff who are not married and for whom accommodations might, with benefit to student life, be provided in the dormitories. If such provision be made, it would better be through the assignment of two or three "stairways" to this purpose than in scattering the members of the instructing staff individually among the student body.

The initial cost of dormitories would vary somewhat with the type of construction and with the character of the average accommodations. Recent experience in other places indicates that for us the range of initial cost per student would come between \$800

and \$1,500. With a proper regard for cost and yet without real sacrifice of architectural attractiveness, we should be able to provide dormitories four or five stories in height, and of essentially fireproof construction, at an average of \$1,000 per student occupant. The best custom today regarding the furnishing of student rooms is to supply with the rooms all furniture actually required, without preventing students, however, from bringing in any other pieces of furniture for which the rooms would be suited. The furnishing of rooms in this way would cost \$100 to \$200 per student. A safe figure to use for the total average cost per student for building and furnishing dormitories of essentially fireproof character would be \$1,200. No fund to cover the cost of maintenance and operation of dormitories would be required, inasmuch as these expenses would be covered by the room rentals. In fact, the rental of rooms in addition to defraying the cost of maintenance and operation might properly be made to pay an interest of four per cent. or more on the cost of buildings and furnishings.

Elsewhere in these pages will be found references to other phases of this problem, such as the relation of fraternity life to the matter, the best provision for dining accommodations, and suggestions for arrangement of rooms and the location of buildings with regard to convenience and architectural attractiveness. In solving this part of the general building problem, we must study with the greatest care the experience of other colleges, but we should not thereby allow our own sense of imagination and originality to be dulled, nor should we hesitate with a full appreciation of conditions elsewhere and of our own needs to inaugurate or try any new feature which appeals to our best judgment as being desirable, just for fear we might make some mistake. The success of Technology in educational fields has been due largely to a combination of learning, originality and common sense. Why should not a similar combination bring success in solving our student-housing problem?

A. F. BEMIS, '93.

DISCUSSING THE FRATERNITY PROBLEM

Shall Fraternities locate on the campus, near the Walker Memorial, gymnasium and athletic field, or shall they continue to live apart?

The question of fraternity housing constitutes an exceedingly important phase of the development of the undergraduate life of the new Technology. Assuming that the year 1911-1912 can be considered an average year, statistics prove that from 30 to 40 per cent. of the total number of students to be housed will be fraternity men. These men must be provided for either in their own fraternity houses or in quarters furnished by the Institute. In the old Technology the fraternities have undeniably solved the question of living for their own members in a very satisfactory manner and it is hoped that this fact will be properly realized, and that a system of undergraduate living will be outlined which will incorporate the very best elements of both fraternity and non-fraternity life, in order that the Technology students of the future may have all the possible advantages of both systems.

Two courses only remain open for the fraternities to follow. Either they must live apart from the campus in their own houses, not associating intimately with non-fraternity men, or they must be accepted by the Institute as a vital and integral part of the student body and quarters must be provided for them which will place them in intimate contact with all other bodies of students.

It is earnestly believed by all fraternity members that the fraternities have a definite duty to perform in the development of their members and there are those who feel that to obtain this development it is necessary for the chapters to live apart from the campus. In this way it is true that a certain privacy of living may be obtained; opportunity to develop men according to the ideas and ideals of the individual fraternity may be secured, and it is possible for the chapters to occupy houses varying widely in size.

The advantages, on the other hand, both to the Institute as well as to the chapters themselves in locating fraternities on the campus are many and varied. It would without question be of advantage to the Institute to have the fraternities locate on the campus in Institute quarters, as in this way a strong and perma-

nent nucleus for the entire dormitory system would be formed, and the Institute as well as the student body would secure the coöperation of a large body of strong men. The fraternity members in addition to securing advantages undeniably obtained by their living in close fellowship with their fraternity brothers and under the inspiration of fraternity ideals would also obtain a broad general culture by being thrown in more daily intimate contact with the entire student body. They would unquestionably receive a great advantage in that they would have immediate access to the gymnasium, athletic field, swimming pool, tennis courts and the Walker Memorial as well as to the libraries, administrative buildings and educational buildings of the Institute. It also appears evident that if the fraternities can mingle in an entirely democratic way with all non-fraternity men the feeling which has existed to a marked degree in other institutions and to a slight degree in Technology between the two bodies would tend to disappear.

If the fraternities were to locate upon the campus in Institute quarters it would be necessary that accommodations be provided which would enable the different chapters to pursue the fraternity method of living. The requirements would be individual dining rooms, individual living rooms and reasonable privacy of operation. The expense of operating individual dining rooms would, without question, be very much greater than that of operating a general commons; but the experience of other large universities would in all cases tend to show that it is extremely difficult, if not impossible, to give satisfactory dining service to students through the medium of a large commons. While it will in all probability be necessary to operate a general commons to accommodate a portion of the student body, it will be necessary to provide arrangements for individual dining rooms, not only in the fraternity section, but also in all other sections where practical and possible.

It is earnestly hoped that the fraternity method of living can be realized for all of the students of the new Technology. The staircase system of dormitory outlined in another article in the present number of the REVIEW will lend itself admirably to this scheme. Under this scheme both fraternity and non-fraternity men will receive the benefits to be derived from constant association with the many and from intimate association with the few in the inner circle of the fraternity chapter or student section.

LAWRENCE ALLEN, '07.

TWENTY-TWO HUNDRED SUBSCRIBERS

Alumni Fund is Steadily Growing—The Next Three Months Will See a Large Increase in Subscribers.

It has been very satisfactory to note that through the holiday season subscriptions to the Alumni Fund have been steadily coming in and although the amounts subscribed are not large, the influence on the Fund is important.

Various members of the Fund Committee, not only representing classes but also representatives of local alumni groups throughout the country are preparing for a concerted movement during the latter part of January which will be continued until every possible name has been added to the list. A number of representatives have been extremely successful in adding to the number of subscribers in their classes and geographical centers. This has been the result largely of personal letters and interviews.

It is the aim of the committee to add at least two thousand more names to the roll of honor during the next two or three months. Indeed some of the local representatives have pledged that the amount allotted to their territory would be paid in full.

The amount of the Fund to the first of January was \$466,765.38, and the number of subscribers was 2,199. During December \$12,152 was added to the Fund by 132 subscribers. Of these 132 over one third are to be credited to four classes—the class of '89, class of '10, class of '11 and the class of '01.

The following table shows the number of subscribers and the amount of money added to the Fund by classes since the first of December. The relative status of the classes and geographical centers has hardly been changed by the receipts for December.

CLASS	SUBS.	AMOUNT	CLASS	SUBS.	AMOUNT
'68			'90	2	\$685.00
'69			'91	2	750.00
'70	2	\$1,025.00	'92	4	365.00
'71			'93	3	250.00
'72			'94	4	625.00

CLASS	SUBS.	AMOUNT	CLASS	SUBS.	AMOUNT
'73	1	10.00	'95	6	910.00
'74	1	500.00	'96	7	565.00
'75			'97	1	150.00
'76			'98	7	640.00
'77	1	35.00	'99	3	150.00
'78	2	125.00	'00	6	605.00
'79	1	25.00	'01	8	690.00
'80			'02	4	135.00
'81			'03	5	205.00
'82			'04	4	325.00
'83			'05	1	12.50
'84	2	30.00	'06	5	275.00
'85	2	75.00	'07	2	100.00
'86	1	250.00	'08	6	345.00
'87	1	250.00	'09	5	385.00
'88	1	500.00	'10	11	353.00
'89	11	482.00	'11	10	325.00

Special Notice

This number of the REVIEW is especially devoted to the preliminary suggestions of the Walker Memorial Committee. This committee has presented its plans in a general way in a previous number of this magazine and asked for suggestions and criticisms in regard to the plans submitted. Response to this invitation has been very meagre indeed. The suggestions made in this number, however, are of a more specific character and will be examined with care by our readers.

The problem before the committee cannot depend for its solution on the experience of other institutions, and in its attempt to provide the most complete facilities for social and athletic development of Institute students, it will need friendly coöperation and constructive criticisms from every alumnus having an interest in Alma Mater.

ENROLLMENT LARGER THAN EVER

Sixteen Hundred and Eleven Students Registered This Year—
One Hundred Ninety-one College Men in the New Class—
Number of Foreign Students Continues Large

The enrollment at the Institute this year is larger than ever before. The final count shows 1,611 students registered against 1,559 last year. The phenomenal number of 1902 and '03 which jumped 180 over the previous year because of advertised increases of fees, is surpassed by 3. There is a material increase in the number of college men attending the Institute. There are 102 graduates of other colleges among the new men, and 89 who have attended other colleges but have not been graduated. This is an increase of 31 over last year. There are 627 new men coming to the Institute and there are 389 in the freshman class. There are now 100 foreigners at Technology.

The colleges sending new men are:—Alabama Institute, Auburn, Ala., 2; Allegheny College, Meadville, Pa., 1; Amherst College, Amherst, Mass., 3; Bates College, Lewiston, Me., 3; Baylor University, Waco, Texas, 1; Beloit College, Beloit, Wis., 2; Boston College, Boston, Mass., 4; Boston University, Boston, Mass., 3; Bowdoin College, Brunswick, Me., 2; Brown University, Providence, R. I., 3; Bryn Mawr College, Bryn Mawr, Pa., 1; Canisius College, Buffalo, N. Y., 2; Case School of Applied Science, Cleveland, Ohio, 1; University of Chicago, Chicago, Ill., 1; College of the City of New York, New York City, 4; Clark University, Worcester, Mass., 1; State School of Mines, Golden, Colo., 1; Colby College, Waterville, Me., 1; Colorado College, Colorado Springs, Colo., 1; Columbia University, New York City, 1; Cornell University, Ithaca, N. Y., 1; Dartmouth College, Hanover, N. H., 9; Denison University, Grandville, Ohio, 2; Drake University, Des Moines, Iowa, 2; Franklin and Marshall College, Lancaster, Pa., 1; Georgetown University, Washington, D. C., 1; Gonzaga College, Spokane, Wash., 1; Grove City College, Grove City, Pa., 1; Hamilton College, Clinton, N. Y., 3; Hamline University, St. Paul, Minn., 1; Harvard University,

Cambridge, Mass., 8; Holy Cross College, Worcester, Mass., 1; University of Illinois, Urbana, Ill., 2; Johns Hopkins University, Baltimore, Md., 2; University of Kansas, Lawrence, Kans., 2; Lafayette College, Easton, Pa., 2; Leland Stanford Jr. University, Stanford University, Cal., 1; University of Michigan, Ann Arbor, Mich., 3; Michigan State Agricultural College, Agricultural College, Mich., 1; Middlebury College, Middlebury, Vt., 1; University of Minnesota, Minneapolis, Minn., 2; University of Mississippi, University, Miss., 1; University of Montana, Missoula, Mont., 1; National University, Washington, D. C., 1; University of Nebraska, Lincoln, Neb., 2; University of New Mexico, Albuquerque, N. M., 1; New York University, New York City, 3; University of North Carolina, Chapel Hill, N. C., 1; University of North Dakota, University, N. D., 2; Oberlin College, Oberlin, Ohio, 3; Occidental College, Los Angeles, Cal., 2; Ohio State University, Columbus, Ohio, 1; University of Oregon, Eugene, Ore., 1; Oregon State Agricultural College, Corvallis, Ore., 1; Otterbein University, Westerville, Ohio, 1; Park Institute, Pittsburgh, Pa., 1; University of Pittsburgh, Pittsburgh, Pa., 1; Pennsylvania Military College, Chester, Pa., 2; Pennsylvania State College, State College, Pa., 1; Princeton University, Princeton, N. J., 3; Saint John's College, Annapolis, Md., 2; Saint Louis University, St. Louis, Mo., 3; Saint Mary's College, St. Mary, Kans., 1; Saint Olaf College, Northfield, Minn., 1; Saint Xavier College, Cincinnati, Ohio, 1; Sheffield Scientific School, Yale University, New Haven, Conn., 2; Simpson College, Indianola, Iowa, 2; Smith College, Northampton, Mass., 1; University of South Dakota, Vermillion, S. D., 1; Spring Hill College, Mobile, Ala., 3; Syracuse University, Syracuse, N. Y., 1; Tarkio College, Tarkio, Mo., 1; University of Tennessee, Knoxville, Tenn., 1; University of Texas, Austin, Texas, 4; The Agricultural and Mechanical College of Texas, College Station, Texas, 1; United States Naval Academy, Annapolis, Md., 6; United States Military Academy, West Point, N. Y., 1; University of Virginia, University, Va., 2; Virginia Military Institute, Lexington, Va., 1; Wabash College, Crawfordsville, Ind., 1; Washburn College, Topeka, Kans., 2; Washington University, St. Louis, Mo., 1; Washington and Jefferson College, Washington, Pa., 2; Washington and Lee University, Lexington, Va., 2; Wellesley College, Wellesley, Mass., 2; Whitman College, Walla Walla, Wash., 1;

Williams College, Williamstown, Mass., 11; College of William and Mary, Williamsburg, Va., 1; University of Wooster, Wooster, Ohio, 1; Yale University, New Haven, Conn., 5; Yankton College, Yankton, S. D., 1.

Foreign colleges and universities represented: Anhui Provincial College, China, 2; Chili Provincial, China, 1; Chinese Naval College, China, 1; Escuela Industrial, Buenos Ayres, 1; Euphrates College, Turkey, 1; Institute of Havana, Cuba, 3; Imperial Polytechnic College, Shanghai, China, 8; Imperial Japanese Naval Engineering College, Tokio, Japan, 1; McGill University, Montreal, Canada, 2; University of Melbourne, Melbourne, Australia, 1; Chinese Naval College, Nanking, China, 3; Oxford University, England, 1; Royal Military Academy, Canada, 1; Scientific and Literary Institute, Chihuahua, Mexico, 1; Syrian Protestant College, 4; Wuchang Provincial College, China, 1; Polytechnic College of Zurich, Switzerland, 1.

There are 4 candidates for the degree of doctor of philosophy, 3 for the degree of doctor of engineering, and 26 for the degree of master of science. There are 2 non-resident fellows, and 14 women registered as regular students.

It is interesting to note that the instructing staff is steadily increasing. Four or five years ago the number was 200, last year it was 245, and this year 255.

The following is a partial list of sons of former students registered this year: Bowditch, W. I., son of E. W. Bowditch, '69; Brewster, E. W., son of W. W. Brewster, '70; Bryant, W., son of H. F. Bryant, '87; Crosby, I. W., son of W. O. Crosby, '76; Dewson, H. F., son of E. H. Dewson, '85; Duff, P. H., son of Dr. John Duff, '81; Fellows, R. C., son of C. L. Fellows, '77; Fiske, C. P., son of J. P. B. Fiske, '89; Freeman, H. T., Freeman, J. R., Jr., Freeman, R. M., sons of John R. Freeman, '76; Hatch, P., son of F. C. Hatch, '95; Kittredge, G. D., son of George W. Kittredge, '77; Lawrence, J. C., son of J. W. Lawrence, S. M. A. '79; MacRae, N., son of Hugh MacRae, '85; Sully, K. M., son of J. M. Sully, '88; Tenney, J. B., son of Frank Tenney, '83; Wesson, H. B., son of David Wesson, '84; Woodbridge, S. T., son of S. H. Woodbridge, '79.

NEWS FROM ALUMNI CENTERS

Two new Technology Clubs formed—"Mr. Smith" makes a speech at Cleveland—Albany men tell the stories of their lives—Alumni active everywhere

THE PITTSBURGH ALUMNI ASSOCIATION.—The Pittsburgh Alumni Association opened its season of 1912-1913 with a smoker at the University Club on November 6 last. The meeting was well attended and a great spirit of good fellowship prevailed. There were new men from the later classes as well as others from the older classes and they were busy renewing acquaintances.

There was great interest manifested in the coming meeting of the Alumni Association at New York on January 17 and 18, and it is hoped that a good delegation may be in attendance from the Pittsburgh district. The new members in this district who are registered to date are,—Gerard H. Matthes, '95; H. J. Macintire, '05; Maurice R. Scharff, '09; N. C. Nicol, '09; Marcus A. Grossman, '11; Joseph A. Aaron, '11; N. M. Katsainos, '12.—*Luther K. Yoder, '95, Secretary-Treasurer, 5810 Murrayhill Place, Pittsburgh, Pa.*

TECHNOLOGY CLUB OF NEW BEDFORD.—The annual meeting of the club was held November 21, and officers were elected as follows: president, D. W. Beaman, '96; secretary and treasurer, R. D. Chase, '92; these, with R. A. Swan, '97, compose the executive committee.—*R. D. Chase, '92, Secretary-Treasurer, 59 Fourth Street, New Bedford, Mass.*

THE TECHNOLOGY CLUB OF PUGET SOUND.—The club is holding its usual monthly luncheons on the third Tuesday of each month at the College Club in Seattle.

We are enjoying an average attendance of about fifteen members and look forward with a special interest to receiving further news of the new Institute.—*M. P. Anderson, '10, Secretary, 111 Cherry Street, Seattle, Wash.*

TECHNOLOGY CLUB OF THE MERRIMACK VALLEY.—The third annual fall Field Day of the club was held on Friday afternoon and evening, October 25, 1912, at the Vesper Country Club, Tyngsboro, which is but a short distance from Lowell. As was the case in 1911, the weather was most unfavorable, a heavy rain setting in late in the afternoon and continuing all the evening. In spite of these conditions, however, thirty-one members sat down to dinner, the classes represented ranging from '69 to '10.

After the dinner, President Ivar L. Sjöström, '88, introduced the several guests of the evening: A. T. Bradlee, '88, of William Whitman & Co., Boston; H. J. Horn, '88, vice-president of the New York, New Haven & Hartford Railroad, and Frederic Dillon, '93, treasurer of the Dillon Boiler Works, Fitchburg. Mr. Bradlee spoke about the plans for the New Technology, Mr. Horn told of some phases of railroad management, while Mr. Dillon gave an interesting account of a personal "Trip Around the World in Eight Days."

It was voted that the president appoint a committee to represent the club at the proposed federation of Technology clubs to be held in New York in January.

Those present were Messrs. Bradlee, Horn, Dillon, Dempsey, Pearson, Carney, Nelson, Morton, Hanchett, Cheney, Wesson, Stevens, Lindsly, Lambert, Whitaker, Kimball, Stephens, Barker, Perkins, Keables, Atwood, Bowers, and Hildreth of Lowell, Lambert of Tyngsboro, Chase of Derry Village, Hunt of Manchester, Sittinger of Nashua, Hildreth of Westford, Sjöström, Hale and Collins of Lawrence.—*John A. Collins Jr., '97, Secretary, 67 Thorndyke Street, Lawrence Mass.*

TECHNOLOGY CLUB OF THE CONNECTICUT VALLEY.—In regard to news of the Connecticut Valley Association, I have put it off until the last minute, hoping to say something definite about the winter dinner, but regret that I am unable to do so. We are discussing plans at the present time and if possible, will hold the dinner either in Hartford or Springfield the latter part of the winter. Our plans will be made with the coöperation of the Hartford and Springfield organizations. Any Tech man who has recently moved into Connecticut or Western Massachusetts will, I hope, send his name and address to the secretary.—*Ernest W. Pelton, '03 Secretary, 77 Forest Street, New Britain, Conn.*

SOUTHEASTERN TECHNOLOGY ASSOCIATION.—Renewed interest is being taken in the association because of the advent into the district of several new Tech men, who are connected with the Alabama Interstate Power Company, which has recently opened up headquarters in Birmingham.—O. G. Thurlow, '04, is designing engineer; W. E. Mitchell, '03, is electrical engineer; and "Cliff" Boylston, '08, Course I, is in the designing department. In addition to these there are several other men in the field doing work for the same company.

Plans are under way for a midday luncheon, when a committee will be appointed for the purpose of arranging a "Big Feed" to be "pulled off" about the first, at which all the newcomers will be given an official cordial welcome (incidentally dues will be collected). It has also been suggested that monthly excursion trips to points of interest in and about the Birmingham district be made features of the organization in the future.—*Joseph H. White, '09, Tennessee Coal, Iron & R. R. Co., Construction Department, Birmingham, Ala.*

TECHNOLOGY CLUB OF ALBANY, NEW YORK.—Thirty-eight members of the Technology Club, composed of alumni of the Massachusetts Institute of Technology, attended an informal dinner held last evening at the Mohawk Golf Club. The principal speaker of the evening was Prof. H. P. Talbot, '85, head of the chemical department of the Institute. He told of the removal now being made of the Institute from Boston, where the quarters are cramped, to larger quarters at Cambridge. In telling of the efforts made to collect funds for the erection of the new buildings, Professor Talbot said the mysterious contribution of \$2,500,000 was still unsolved, the giver still remaining unknown.

Dr. W. R. Whitney '90, was toastmaster and he called on A. Rice McKim, '06, J. B. Taylor '97, and H. Mott-Smith, '93, for responses. Afterward an innovation was introduced. Each man present was required to arise and recite his biography, giving his life history, not neglecting any important detail from the date of his birth up to the present time.

This occasioned a lot of humor, as each speaker was required to tell when and where he was born, tell some of his college experiences, the time of his graduation, what positions he has held since then and among other things what his particular hobby is. By

this means the lines of friendship were drawn tighter and the alumni got on a better footing of acquaintance. There was singing and incidental college yells to enliven the interim. Those present were:

Messrs. Hawkins, Allison, Howell, MacMaster, de Romana, Holmes, Lugee, Morash, Withead, Montt, Gilcreest, Arthur, Whitney, Coolidge, Palmer, Robinson, Hagood, Draper, Sage, MacKay, Arsem, Buck, Hobart, Talbot, J. B. Taylor, Dutton, Smyser, W. Taylor, Sprague, Mackintosh, Mott-Smith, Bent, of Schenectady; McKim, Suter, Sargent and True, Albany; Cassidy and Patton, Amsterdam.—*Schenectady (N. Y.) Union Star.*

SOUTHWESTERN ASSOCIATION, MASSACHUSETTS INSTITUTE OF TECHNOLOGY.—Organization Meeting, November 16, 1912. On November 16, 1912, fifteen Kansas and Missouri Technology men held a banquet in the quarters of the Kansas City University Club. After the banquet, the temporary president, Lewis G. Wilson, '04 called a meeting of the association. After the minutes of the last meeting had been read and filed, he called for the report of the committee on membership and arrangements. R. S. Beard, '05, reported for the committee that two circular letters had been sent out to all of the Technology men in the eastern half of Kansas and the western half of Missouri at an expense of a little over \$10 and that with the assistance of H. T. Mulhall, '97, whose guests we were at the University Club, the committee had made the necessary arrangements for the banquet. The result of the committee's work was the present well-fed gathering which the committee now turned over to the president. On motion of H. T. Mulhall the report was accepted and filed.

The next question in order was the naming of the club. Mr. Mulhall moved that the club be called the Southwestern Association, Massachusetts Institute of Technology. A. A. Potter, '03, moved the club be called the K. M. N. & O. Association (Kansas, Missouri, Nebraska, and Oklahoma), and Mr. Beard moved that it be called the U. S. C. G. Technology Club, (U. S. Center of Gravity). The name Southwestern Association, Massachusetts Institute of Technology was almost unanimously adopted.

The question of initiation fees, dues, and the establishing of a resident and a non-resident membership district came up next. This question called forth considerable discussion. C. L. Simp-

son, '89, made the motion concerning initiation fees and annual dues which was adopted and afterwards incorporated, into the Constitution as Article Seven. C. M. Hardenbergh, '03, made the motion defining the membership districts which was adopted and incorporated into Article Three of the Constitution.

The president then called for the report of the committee on constitution and by-laws. Chairman Mulhall made the report for the committee which, on the motion of Mr. Simpson, was accepted and filed.

Lewis G. Wilson, '04, H. T. Mulhall, and Robert S. Beard were unanimously elected president, vice-president and secretary-treasurer respectively.

No further business occurring, H. F. Hoit, '97, gave the men a talk on the New Technology movement and asked that each man subscribe \$10 for every year that he has been out of Tech. He promised us that he would follow up every man until he gave a definite answer one way or the other as to whether he would loosen up or not.

On motion of J. P. Sprague, '00, the meeting was then adjourned.

The following men were present: Frank Cushman, Jr., '01; Frederick Dierke, '12; W. D. Green, '09; C. M. Hardenbergh, '03; Herman C. Henrici, '06; H. F. Hoit, '97; H. T. Mulhall, '97; E. M. Price, '08; A. A. Potter, '03; R. A. Seaton, '11; C. L. Simpson, '89; Jas. P. Sprague, '00; G. Neville Wheat, '04; Lewis G. Wilson, '04; and the secretary.—*Robert S. Beard, '05, Secretary-Treasurer, 714 Y. M. C. A. Dormitories, Kansas City, Mo.*

THE TECH CLUB OF THE UNIVERSITY OF ILLINOIS.—A dinner of the Technology men living in the vicinity of Urbana and Champagne was held in the University Club of Urbana and Champagne in December. Those present were: Dean W. F. M. Goss, Prof. F. M. Mann, Prof. F. C. Lincoln, Prof. A. B. McDaniel, A. H. Kimball, H. S. Eames, and E. B. Flanigan of the College of Engineering; Paul Hanes, Ralph Hilscher and H. F. Ferguson of the State Water Survey; Prof. E. W. Washburn of the department of chemistry; H. N. Parker and W. F. Wells of the College of Agriculture. Letters of regret were read from Miss Isabel Bevier of the department of household science, Lambert Thorp of the department of chemistry, and L. J. Towne of the College of Engi-

neering. There was no formal program. Dean Goss presided, and the evening was very pleasantly spent in listening to the account of the work that the several Technology men present had been doing since leaving the Institute. A permanent organization, known as "The Tech Club of the University of Illinois" was formed. A. B. McDaniel '01 was elected president, H. N. Parker, '94 secretary, and Paul Hansen, '03 treasurer. It is hoped that Tech men coming to Illinois in the future will put themselves into communication with the club.—*Horatio N. Parker, '94, Secretary, University of Illinois, Urbana, Ill.*

TECHNOLOGY CLUB OF NORTHERN OHIO.—“Mr. Smith,” the donor of Technology’s great gift, honored the Technology Club of Northern Ohio with his first public appearance. The members of the association were somewhat surprised to discover that Mr. Smith has red hair—also red whiskers. Moreover, Mr. Smith was dressed in the extreme of fashion with Scotch plaid vest, green cut away coat, and checked trousers of gorgeous pattern. Mr. Smith, who was impersonated by Don Stevens, '11, told, à la Mr. Dooley, how he came to give his millions to the Institute and needless to say his speech was frequently interrupted by enthusiastic cheering.

The dinner which was held at the Hoffman on December 21 was well attended and was presided over by President Smythe. Among the other speakers were R. B. Wallace, '98; Ritchie, '78; Geo. Glove, '08; Sydney Ball, '03; A. P. Truette, '10; Cady, '01; Metcalf, '90; Dates, '94 and Bardwell, '84.

A large banquet is planned for the early spring at the new Hotel Statler and it is hoped that Mayor Baker will be the guest of honor. Northern Ohio is already planning to make a bid for the first gathering of the Technology Clubs Associated.—*Sydney Y. Ball, '03, Secretary, Ball Watch Co., Cleveland, Ohio.*

TECH MEN IN THE PUBLIC EYE

WILLIAM C. POTTER, '97, formerly president of the Intercontinental Rubber Company, has resigned from that position to become vice-president of the Guaranty Trust Company of New York. By profession Mr. Potter is a mining engineer and for three years after leaving the Institute he was engaged as foreman, engineer and superintendent of various mining operations in Colorado and Montana. In 1900, he was appointed mining engineer of the Atchison, Topeka & Santa Fé Railway, and from 1903 to 1905 was general manager of the Guggenheim Exploration Company in the Republic of Mexico. He became general manager and director of the American Smelting & Refining Co. and American Smelters Securities Company in 1905, and for the past year has been president of the Intercontinental Rubber Company.

WALTER W. BONNS, '99, has resigned his position as associate professor of horticulture at the University of Maine, to become assistant professor of pomology at the University of California, and plant physiologist of the Citrus Experiment Station, at Riverside, Cal. Professor Bonns has done much research work on the morphology of citrus fruits using materials which were shipped to him from Florida and California. His removal to the west was largely determined by his desire to continue these researches under more favorable conditions.

A. B. McDANIEL, '01, formerly professor of civil engineering at the University of South Dakota, has been appointed assistant professor of civil engineering at the University of Illinois.

HENRY F. KEYES, '05, was recently appointed consulting architect to the directors of the Port of Boston.

FRANCIS A. J. FITZGERALD, '95, is one of the leading authorities on electric furnaces to which he has given the greater part of his time since his graduation from the Institute. He was a graduate of Dublin University before coming to Boston and after graduation here he was employed as chemist for the Carborundum Company of Niagara Falls. He is now engaged in consulting practice.

WILLIAM F. M. GOSS, '91, Dean of the College of Engineering, University of Illinois, was made president of the American Society of Mechanical Engineers at its annual convention. Doctor Goss is one of the most prominent figures in mechanical engineering circles in the west, having made a national reputation while connected with the University of Illinois, more especially along the lines of railroad motive power. He first attended the School of Mechanic Arts of the Institute, graduating in 1879, and afterwards matriculated as a special student at the Institute.

GEORGE A. TABER, '94, assistant engineer, department of water supply, gas, and electricity, New York City, has been appointed professor of water supply and sewage disposal at the Brooklyn Polytechnic Institute.

PHILIP LITTLE, '79, was the winner of art honors at the annual award of prizes by the Art Institute of Chicago in November. After leaving the Institute Mr. Little entered the Pacific Mills, after which he took up a course in the School of Design at the Institute, later studying at the Boston School of Fine Arts.

W. J. BRICKLEY, '00, has been made surgeon in chief of the Relief Hospital, Haymarket Square, Boston. After leaving the Institute Doctor Brickley was graduated from the Harvard Medical School in 1907.

ARTHUR L. WILLISTON, '89, principal of the Wentworth Institute of Boston, was elected president of the Manual Training and Art Department of the New England Educational Association during its meeting in Chicago. After leaving the Institute, Professor Williston was an instructor in steam engineering at that institution and afterwards director of industrial arts at the University of Ohio. In 1898 he became director of the School of Science and Technology at the Pratt Institute, Brooklyn, and in 1910 became head of the new Wentworth Institute in Boston.

HERBERT LEWIS, '93, has recently been promoted to the charge of one of the principal divisions of the United States Patent Office in which he has been ranking assistant. He was graduated from Amherst College before coming to the Institute and prior to his connection with the patent office was employed by the Westinghouse Electric & Manufacturing Co. in Pittsburgh.

DOCTORS OF CIVILIZATION

Read the terse yet masterful account that Thucydides gives of the "Black Death," a scourge which, despite their remarkable civilization, the ancient peoples clustered in Southeastern Europe and Asia Minor were unable to combat, or peruse Pepys' description of the terrible ravages of the Great Plague in London, and the thought strikes home that the gregarious instinct of man cannot be satisfied without paying a tragic toll. The diseases of perilous occupations, the accidents due to unprotected machinery, the ills obviously caused by poor ventilation, all these can be avoided by the ingenuity of the architect and the engineer. But the pests that have decimated even a rural population are not prevented in any obvious way. Their origin is hidden in wells that apparently yield only pure water, in the bites of insects apparently harmless. They are, in truth, diseases of civilization, which required for their eradication scientific investigation as painstaking and self-sacrificing as the researches that have given us the wonderful antitoxins and sera by which we cure typhoid fever, diphtheria, pneumonia and other maladies, formerly considered fatal.

Not until the bacteriologist with his microscope and his stains had discovered the germs, invisible to the naked eye, that are responsible for most of the ills which flesh is heir to, did it become possible to create the modern profession of sanitary engineering—to educate, in a word, the doctor of civilization. Prevention is the watchword of that new profession—prevention of the conditions under which deadly bacteria may thrive and prevention of the transmission of these bacteria should they breed. Not without the sacrifice of men who could ill be spared has this truth been learned. Heroes have been found, willing to subject themselves to the stings of bacteria-carrying insects, in order to prove that not the exhalations of swamps but the natural inoculating needle of the mosquito is the real cause of some infectious diseases; that miasmas do not in themselves cause ills, but simply aid the breeding of the living vehicles that carry disease germs.

Within the lifetime of living men it was thought that only a physician was fitted to be head of a Board of Health. Even in the

smaller towns a medical man is still found intrusted with the well-being of hundreds and perhaps thousands of town dwellers. Gradually, the new doctor of civilization, the sanitary engineer, the public health expert trained to cope not with the ills of individual human beings but with epidemics that devastate whole communities, is coming to the front. Such is the need for these men that our technical institutions are now offering courses in sanitary engineering. To the Massachusetts Institute of Technology belongs the credit of having, years ago, established the first of these under the guidance of Prof. W. T. Sedgwick. Other institutions soon followed. They have all justified their existence by graduating many students, now actively and successfully engaged in public health work. Not many years will pass when the health of every community will be intrusted not to a graduate physician, but to a trained public health expert.—*Scientific American.*

The Ellen H. Richards Fund

It is a pleasure to learn that the sum of \$15,000 has been raised and paid to the Institute and is to be known as the Ellen H. Richards' Fund. The income from this fund is to be devoted to the promotion of research in sanitary chemistry, the branch of science to whose development Mrs. Richards so greatly contributed. It is understood that the income will be used by the Institute for the award of fellowships to advanced students, competent to pursue this line of research, also for the employment of research assistants and in such other ways as will best promote investigations in the field in question.

Friends of Mrs. Richards expect that this nucleus will be raised to the sum of \$100,000 in the future, an amount that will return sufficient revenue to accomplish large results along the lines desired.

MISCELLANEOUS CLIPPINGS

To the bacteriologists of the Bureau of Chemistry, we commend a paper which appears in the *Journal of the American Medical Association*, **The Proof of The Pudding** October 26, 1912, from the pen of Dr. W. T. Sedgwick, the professor of biology and of public health in the Massachusetts Institute of Technology. We are aware that this suggestion is not likely to be received with enthusiasm; for Professor Sedgwick has long been opposed to the wholesale destruction of foods because they are merely of inferior quality and has insisted that Government supervision should preserve and make safe such products. Moreover, we can see immense possibilities in cunningly twisting Doctor Sedgwick's article on "The Fallacy of Testing Food Materials by Animal Inoculation" into a hearty recommendation to eating rotten eggs and a splendid indorsement of putrid food in general.

The point that Doctor Sedgwick makes in his paper is simply this: A food is not necessarily unfit to eat because, when injected beneath the skin, it may kill an animal. Although Doctor Sedgwick does not say it, we have no doubt that subcutaneous injections of many pure foods would prove fatal to lower animals. Every physician knows that a quantity of morphine which, taken hypodermically, would kill very quickly, can be swallowed with impunity. The toxins of diphtheria, tetanus, typhoid, and other infections act either comparatively feebly or not at all when taken by the mouth. So, too, the germs of lockjaw and anthrax, two of the worst diseases that afflict the human race, can be eaten; but they may not be injected with the hypodermic needle without incurring terrible results.

In face of all this, in face of the fact that the purity and salubrity of drinking water is no longer determined by injection, "certain Government bacteriologists," as Professor Sedgwick euphemistically refers to the Bureau of Chemistry's pseudo-scientists, seek to revive this discredited "test"—not only for water, but for eggs, oysters, ice cream, gelatines, and other condiments.

Professor Sedgwick is probably the last man who would advocate the eating of decomposed eggs, or would himself prefer a cold storage egg to the "newly laid" of the barnyard fowl. But he cannot refrain from arguing that the long experience of the trade and of consumers of eggs, particularly of those bakers who have used cold storage eggs in pies, cakes, and custards, without perceptible injury and with results no different from those obtained with fresh material, should not be brushed aside in favor of the

data obtained by a scanty and unquestionable experimentation which consists not in feeding animals as man is fed, and not after cooking the food but in directly injecting large amounts of the raw and uncooked substance beneath the skin or into the delicate peritoneal cavities.

The alimentary canal is very ingeniously designed. Special walls prevent the absorption of the undesirable components of foods, leaving to the intestines the task of casting them out. Not only does cooking profoundly affect food, destroying as it does most bacterial life, not only does the stomach chemically change food, raw as well as cooked, but the direct injection of raw food into the body beneath the skin becomes, as Professor Sedgwick says, "a crude and severe procedure, a kind of rough surgical interference, totally different from the normal taking of the same materials into the body by way of the food tube—perhaps already cooked." To determine the fitness or unfitness of an egg or an oyster it must be swallowed. The proof of the pudding, in other words, lies in the eating. If an animal dies because it has been inoculated with food, no scientific light is shed on the purity or healthfulness of the material injected. Besides, a vast quantity of food is destroyed which in these days of the high cost of living can ill be spared.—*Scientific American*.

Prof. D. C. Jackson, head of the electrical engineering department of the Massachusetts Institute of Technology, who for the last two years has been engaged in making a valuation of the telephone companies of Great Britain which are to be taken over by the post-office department, arrived from Europe yesterday on the steamship *Mauretania*.

Professor Jackson stated that although his work has not been finally completed, he expects that the total value of the telephone properties that are to be taken over by the Government will be placed at between \$50,000,000 and \$60,000,000. He says that the figure that will be paid to the National Telephone Company which has been operating the telephone system abroad will probably be in the neighborhood of one of the amounts just mentioned. The National Company, he said, offered to sell its property and assets to the Government for \$100,000,000, but no such price will eventually be paid for the properties.

Professor Jackson said that the gross earnings of the properties to be taken over by the Government will approximate about \$10,000,000 this year. It is expected by the Government that the telephone properties will produce sufficient revenues to a little more than pay interest on the amount of money invested in the project. At the present time the Government receives a royalty of 10 per cent. of the gross revenues of the telephone company.

Professor Jackson says that there is to be a readjustment of telephone rates as soon as the Government assumes actual control of the system.

which will probably result in a somewhat cheaper rate than now exists. At the present time the rates charged are £17 per annum flat rate for an unlimited number of calls, while the measured rate is £5 per annum with a charge of 1 penny (equal to 2c.) per call for all messages over a certain number.—*Financial America.*

After all, it is a plain question of one business man asking a teacher, or some friend, or the editor of a newspaper: "Will it pay my boy to study at some technical college to become an electrical engineer?"

Electrical Engineering Education Of course, no man alive can give the answer and have it apply to everyone. It is a question that means consideration of each different case. There is the eternal human factor. Who is the boy? What is his make-up? What chance has he for a start? What likelihood is there that he can hold on long enough to have given himself a fair chance?

There are plenty of men, speaking with an air of authority, who will assert that all the engineering professions are overcrowded and that the boy to do more than merely fairly well must have powerful relatives or friends who will place him. But, on the other hand, it is perfectly proper to show what the results have been in the past and to ask: Are there similar chances in the future or are they all gone? Those who have an insight into the unfolding fields in which electricity is every day becoming of greater and greater importance, will be loth to admit that all the good places are filled and that there are to be no more.

There is one point about the general technical education of the higher special institutions that is not to be disputed. Edison not long ago expressed it in the terms:

ENGINEERS ARE "USABLE MEN"

"They make usable men." Such a school gives to the student an education that is his capital. The technical education is the one that the poor boy can gain with the certainty that his future will be better assured and that the situations to which he attains will be of greater importance and will pay better than would otherwise have been possible.

There is nothing so easily understood as a concrete example. The recent report of the President of the Massachusetts Institute of Technology gives some figures that are directly to the point. Here is an institution whose statistics show it to be preëminently the college of the poor student or of the one in only moderate circumstances. These statistics show that one in every six of its students is receiving aid through one or another of the scholarships or funds. The success of these men in later life has been notable; they are among the country's leaders in the departments in which they have studied. A single example is the recent New

York Typhoid Commission, on which the three sanitary experts who are not physicians are a Technology professor, W. T. Sedgwick, and two of his former students. Such cases as these, which can be repeated in all the engineering professions, of the technical student in responsible places, are not the dreams of the future, but the cold facts of today.

In a consideration of success in the matter directly in hand, electrical engineering, it is necessary first to define success, to agree upon some standards by which success or failure may be judged. Two such criteria will suggest themselves to the business man as being eminently sensible: How attractive has the profession proved to those who have chosen it, and what standing in the world have these men attained? Then, of course, there is the question: Has it any future? But this may be dismissed at once, in view of the fact that new fields are developing every day, and that many hundreds of millions of dollars are saved to the country each year through improvements and methods that were not known a decade ago.

The best way to answer the first question, how attractive has the profession of electrical engineering proved, is to present a concrete example, which may be done by use of the figures given in the Massachusetts Tech Catalogue of the present school year. There are here comparative tables that are well worth the study.

In the score of years from 1885 till 1910 there were graduated at Boston 756 electrical engineers, of whom 24 are dead. Of the remaining 732, 53 have not been defined as to business or profession in the Institute records. There are 49 who have become teachers, 19 have gone into the service of the United States Government, while 477 have remained within the profession for which they prepared themselves in college. This is almost two-thirds of the students who graduated in this course. Their distribution in the different branches of electrical work shows that 260 of them are in business for themselves as electrical engineers; that 112 have taken up some electrical business enterprise, and that most of the remainder are with electrical corporations, telegraph, telephone or street railway or power companies.

This showing has only one interpretation—that the profession is really attractive, because it holds those who are engaged in it. It is so easy in this country for a man to change his calling, particularly easy in engineering, where the foundations of the different branches are so much the same that if the electric engineering profession were on the decline, or if it were merely holding its own, it would be natural to think that those in it would be getting out of it. But, on the contrary, it has here even drawn a little from some of the other engineering professions, and 38 other men of the same Institute, not originally fitted for electrical work, have joined the electrical group.

Taking the complete figures, subtracting from the whole number of graduates those who have gone to other businesses, even other depart-

ments of engineering, and adding the number that have come into electrical engineering from other departments, there are in the profession a number of Technology men equal to 70 per cent. of the surviving graduates of the special engineering course.

It must be very evident here that there has been no great exodus from the profession. The principal losses are the 27 engineers other than electrical, already noted; 49 men gone into other professions and 58 men who have taken up general business, which always has attractions for American men.

Now, a word about the importance of some of the positions. The director of the greatest American research laboratory in professional electrical work at Schenectady is from this group, with at least four general managers of electrical corporations, four local managers and one treasurer. Twelve of the group are connected with railways using electricity, one a president and another a manager, while in the employ of the big companies they may be numbered by dozens. One of the men who have made tungsten possible is an electrical engineer, but from another college, and graduates from the many other technical schools are in other responsible positions near the top.

THE EARNING CAPACITY OF AN ELECTRICAL ENGINEER

If definite figures of salaries could be given, they would add some evidence, but these are very difficult to secure. In a single class of the Institute 152 members have responded to a call for salary figures. Sixty-two men get between \$2,500 and \$5,000; 31 between \$5,000 and \$10,000, and 16 above \$10,000, two of the last being rated at \$50,000. These figures look well, and they show prosperity, but it is difficult to apply them, save in most general fashion, to the immediate question of electrical engineering.

Are the good places all filled? Common sense, with a realization of the ever-increasing use of electricity, would say "No." Evidence here is not altogether easy to collect, but direct to the point are two recent newspaper items. One man at 31 years of age is announced to be the engineering head of three great trolley companies centering in Syracuse and Utica, to take the place of another who has gone higher, while in Boston another electrical engineer at 37 has found a new place, created for him, second vice-president of the Boston Elevated Railway Company, which uses electricity alone. These are from the same Institute which has furnished the other figures, and naturally represent only a part of the whole story.

With such facts at hand with present conditions and with every prospect of important future developments, one cannot help coming to the conclusion that the profession of electrical engineering offers good opportunities for industrious and capable young men, properly prepared.

Experts assert even that these opportunities are not excelled in any other profession or branch of business. It is no easy road for even the best. To be at or near the top in these times means skill, application, hard work and the essential principle of business ability. Even a technical training will not serve to its limit the man who lacks this last-named faculty.—*Scientific American.*

The President at the Merchants' Club “The reputation of Technology,” said President Maclaurin of the Institute of Technology last night at the Merchants’ Club, “was never higher and stronger than today in the loyalty and devotion of its alumni, and never was it stronger in the confidence and esteem of that solid element in this great community which realizes in this, as in earlier ages, how much the progress of tomorrow depends on the progress of today.”

It was Technology night, and there was a full gathering of its members at the Algonquin Clubhouse. The menu card, rich in Christmas adornments, was dedicated to the head of the famous Institute and had a picture showing what the coming Technology will look like on its new site at Cambridge.

In introducing Doctor Maclaurin, Pres. R. L. O’Brien dwelt on the great contribution which had been made to the economic and industrial efficiency of New England by the work of the Massachusetts Institute of Technology.

President Maclaurin covered the past, present and future of the Institute. He showed how, beginning with fifteen students, picked literally from the streets of Boston, it had advanced in numbers, in teaching force and in reputation, due to its usefulness, until it now draws students from all parts of the earth and is known all over the world.

“The Institute,” he said, “has never had any serious doubt as to what it was trying to do, and no very great doubt as to the proper means of reaching the end. Its main governing ideas have been rigid discipline, hard work, laboratory methods, and sticking closely to practice, always, however, with great emphasis on the importance of breadth of training.

“Our special aim has been to bring our men into direct touch with the actual conditions of life. As to our work, it would seem as if a field of unexampled development were opening up in the department of chemical industry for the growth of that department of the Institute has been phenomenal.

“There would seem to be no limit to the demands we are receiving from all parts of the country for chemical engineers. Then we have students and recent graduates carrying on researches for all kinds of corporations, not only in chemical but also in electrical and sanitary engineering, and

that has proved one of the most effective educational factors in the success of the Institute."

Turning to the future, President Maclaurin said: "The problems that lie before the Institute are simple and easily explained. Most important by far, so far as immediate purposes are concerned, is the problem of rebuilding on this new site over in Cambridge.

"The physical problem there is capable of solution. The danger is merely the danger of exchanging old lamps for new ones, and possibly of losing something in the process of exchange.

"I need not say much about the site. Its area is about fifty acres. As to the suitability of that site for the purposes of the Institute, there are two problems to be borne in mind—or rather there were two problems.

"You have to pay special regard to the homes and residences of your students. Obviously those students can be divided into two classes—those who live in Boston or very near it, and those who live far away.

"Now those who live far away vastly outnumber those who live near. Therefore you need dormitories for 1,000 or more.

"The site being obviously suitable from that point of view, it remained to acquire it and plan the necessary buildings. That problem is occupying the Corporation of the Institute today.

"It is a fascinating study for me to consider what kind of architecture is appropriate to such an institution, and what kind of architecture is appropriate for that particular site apart from the institution. These are questions on which there are bound to be differences of opinion.

"There is probably a right solution. I shall be glad to receive suggestions on the subject, and I hope the suggestions will be made now rather than after the buildings have been erected.

"One of the most interesting and subsidiary problems is the proper relation between the Institute and Harvard University. That is a difficult and thorny subject in Institute circles.

"There is no question whatever in my mind that the closest possible coöperation between these two institutions would be good for both and good for the community in which they are placed. I hope that the difficulties, small and great, in the way of that coöperation will be removed. I believe they will."

President Maclaurin's remarks were frequently applauded. A hearty vote of thanks was accorded him on motion of Gen. Hugh Bancroft, who spoke of Doctor Maclaurin as "the man who knows how to turn out the men who make the wheels of the world turn round."—*Boston Globe*.

Now comes Professor Sedgwick of the Massachusetts Institute of Technology and says: "I believe that by cold storage today, rightly supervised by boards of health as it should be, the public health has been and will be immensely promoted."

Cold Storage
Eating

We have been waiting for some clear note on the subject

of cold storage and now we have it. The preservation of food, vegetable or animal, has been the subject of a widespread prejudice, and it has been very unjust. All one had to say was that a thing is cold storage and it is immediately condemned. It is simply ignorance that finds fault.

Of course, like everything else good, it may be abused. It may be subject to careless and ignorant methods, but cold storage, intelligently attended to, is a great benefit to mankind. It is a healthful process, and we should not be scared away from it as we have been by the cry of "microbe" or "germ" from other good things. There should be official supervision of all cold storage plants and then we should use their product with confidence. We should have no hesitation in eating a cold storage apple or a cold storage chicken, if they came from a clean and well-kept plant. It is unhealthy to be so squeamish.—*Columbus (Ohio) Journal*.

President Maclaurin, of the Massachusetts Institute of Technology, announces that leave of absence till January 1 has been given to Prof.

A Tribute to Dugald C. Jackson, head of the department of electrical engineering, who has gone to England at the British Government's request. A year and more ago, when the English Post-Office Department considered the purchase of the different telephone lines, it determined to call upon one authority outside the country to work with the English Commission. The selection of the government was Professor Jackson, of Tech, who has been in consultation with the Englishmen two or three times and is now called to England for the final work of appraisal. The importance of the matter may be judged from the fact that not less than fifteen hundred exchanges are involved, with half a million subscribers, and the capitalization is not less than sixty million dollars.

It is a matter of a good deal of local pride at Tech that the other out-of-England expert in the matter is Hammond V. Hayes, a Tech graduate, '85, a Boston electrical engineer. Mr. Hayes is the expert who has been selected by the companies that are interested. Thus it is that the Institute of Technology presents the experts for both parties—an extraordinary evidence of the excellent reputation of the school abroad.—*Cassier's Magazine*.

Though the committee making appeals for money to establish the Home Economics Fund as a memorial to the late Ellen H. Richards makes its **Home Economics—A Memorial** headquarters in New York, the propriety of its endeavor needs no explanation or defence in this city and vicinity. Mrs. Richards was one of the lights of science, but she was also much more. She did not work for the mere glory of discovery. Science was not an end, but a means, and she applied it to the health, the comfort and the general uplift of society. Her name was for years literally a household word and has been identified

with the advancement of all that makes for betterment in home life and service. The family is the unit of government and the character of the home determines the social conditions that prevail.

Tomorrow will be the seventieth anniversary of her birth and the date is one that it is proposed to fittingly observe in schools and clubs, not only this year, but every year. While that may seem a conspicuous honor to be paid her memory, it is one whose propriety is likely to be more and more widely acknowledged as the years wear on. For forty years she was connected with the Massachusetts Institute of Technology, and for a quarter of a century in charge of sanitary chemistry, in which position she was "the first to apply science to home betterment in matters of food, clothing, shelter and the art of living." In this beneficent enterprise she was intensely practical.

Her feet were guided by the lamp of experience. She followed no fanciful theories, however alluring, but advanced no farther or faster than she could proceed with certainty and safety.

That feature of her work imparted to it its large value, and perhaps it is not generally known on what a stable and broad foundation she had established it. The movement now under way to establish a permanent fund of \$100,000 to be used for scientific investigation in home economics, will, when its purpose is realized, be the most fitting memorial of her life and labors that could have been decided upon, for it will be employed in the continuance of the work from which death called her more than a year ago. Her own definition of what home economics stands for is the best. As she stated, it, its meanings were: "The ideal of home life for today unhampered by the traditions of the past; the utilization of all the resources of modern science to improve the home life; the freedom of the home from the dominance of things and their due subordination to ideals, and simplicity in material surroundings which will most free the spirit for the more important and permanent interests of the home and society."

It is easy to entertain ideals, as most people have discovered. To translate them into realities is another matter, yet that is what Mrs. Richards accomplished to an unusual degree. Her standards were high, but in no sense vague and it is a somewhat rare tribute to her achievement that it has received such wide recognition from those whose judgment is entitled to the highest respect, and it is from this number that trustees of the fund are selected. It was a rich field of social and economic endeavor that she opened up, and it is the purpose of those engaged in the movement to honor her memory that it shall not lie fallow. Their purpose is formally announced as follows: "What research and science are already doing for agriculture, for engineering, and for government, may thus be promoted and assured for the life of the common man, woman and child in the home."—*Boston Transcript*.

With 1611 students Tech has the largest registration in its history. Its standard is too high for it ever to become a jumbo institution, but its increased improved equipment will draw increasing numbers of earnest and able students.—*Boston Record*.

President Maclaurin of Tech shows his recognition of the fitness of things in his determination to have the new buildings of the Institute made as convenient and well adapted for technical school work as Tech graduates make mills and factories convenient for the work for which said buildings are designed.—*Boston Record*.

President Maclaurin on Commission

A long step in the direction of securing more scientific information for use in the construction of air craft was taken when President Taft appointed a commission on aëro-dynamical laboratory of which Dr. R. S. Woodward, president of the Carnegie Institute of Washington and a representative of the National Academy of Sciences, is named as chairman. The object of the commission, which was created upon the recommendation of Secretary of the Navy Meyer, will be to consider and report to the President for recommendation to Congress on the necessity or desirability for the establishment of a national aëro-dynamical laboratory, its scope, organization, the most suitable location for it and the cost of its installation. Members of the commission include President Richard C. Maclaurin, Massachusetts Institute of Technology, and Frank West Rollins, '81, New Hampshire.

BOOK REVIEWS

NUTRITIONAL PHYSIOLOGY. By Percy G Stiles, Assistant Professor of Physiology in Simmons College; Instructor in Physiology and Personal Hygiene in the Massachusetts Institute of Technology, Boston. 12mo of 271 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1912. Cloth, \$1.25 net.

Stiles' new book is a concise treatment of the chief divisions of human physiology from the steadfast standpoint of nutrition—of energy transformation. It is not a compendium of tables of calorific food values and practical dietetics for old and young.

Digestion and nutrition, *per se*, naturally constitute the bulk of the book—about two thirds. The remaining third is devoted to the other departments of physiology, the nervous system and muscles and glands preponderating, while a chapter apiece is given to temperature regulation, internal secretion, and alcohol. Obviously an admirably balanced distribution in view of the author's stated aim and plan. Special mention should be made of the alcohol chapter as a classic—a model of sound, impartial treatment.

The form of presentation puts the book in a class of limited membership. The author appears to be master of style of fine simplicity which interposes no screen of muddy language between the reader and the subject-matter. Difficult points are revealed by forceful and oftentimes quaint similes from common experience, but great care is taken to point out the limitations and possible weakness of each analogy.

The subject-matter appears to be scrupulously precise and up-to-date. The unusual combination of soundness and clarity makes the book useful for layman and scientist and particularly for the student of elementary physiology and household economics.

It is difficult to criticise unfavorably on such a delightfully *rara avis* in scientific presentation. But in the reviewer's opinion one of its faults lies in one of its claims to virtue—the use of illuminating analogies. The student, oftentimes, is relieved of the necessity of overcoming any obstacles whatsoever. The reduction of needed mental effort to a minimum is not an unmixed blessing from the point of view of developing the students' powers.

EUGENE C. HOWE, '11.

THE HALF-TIMBER HOUSE. Its origin, design, modern plan and construction. By Allen W. Jackson. New York, McBride, Nast & Co.

To those who own castles in Spain—and who does not—the author has dedicated his book. It is not designed as a technical treatise, nor was it, apparently, prepared as an appeal to the professional reader. It is addressed to the general reader and especially to those who are in love with country or suburban life and who are making a study of houses and house-building, either for simply pleasure, or with the intent of making a home for themselves. It is probable that our English forebears had no thought of producing picturesque dwellings, when they filled their

villages with half-timbered houses, with quaint gables, windows with diamond-shaped panes, swinging outward, red tiled roofs, clustered chimney stacks, and rose-covered porches. When they framed their dwellings and finished the walls by plastering between the framing they probably had an eye to the economical rather than to the picturesque.

These quaintly picturesque dwellings were built when labor was far cheaper than it is today and when labor unions had not become a part of our economic system. People in those days seem to have had very little idea of mathematical precision in building and relied evidently more upon the eye than upon square, plumb and level. This served to increase the picturesqueness of the buildings erected. Age and weather have done their part, so that many of the English villages are a paradise for artists.

Modern taste in our country has called for reproductions of many of these beautiful old-time structures of the motherland, and it is those who find pleasure in such reproductions to whom this book is addressed. There is a large number of full-page pictures illustrating many forms of the half-timber house. But not only this, there are many pages of instructions as to the mode of building in order to produce the most striking and picturesque effects. There are also very many hints as to interior arrangements of the greatest value to those who are contemplating the erection of a house for a home.—*Boston Herald*.

THE LIFE OF ELLEN H. RICHARDS. By Caroline L. Hunt. Boston: Whitcomb and Barrows.

It is not very often that editor and publisher alike embark in a work of love like the memorial volume "The Life of Ellen H. Richards" by Caroline L. Hunt. It is a charming and loving selection from the mass of material that the mere suggestion of such a work brought forth. It is the life story of a pioneer woman in America in many fields of research, of a teacher competent to lead her students into new lines of thought and above all, of a home-maker, one who realized the necessity in America of the spirit that tries to continue the home.

Independence asserted itself even in the childish garden of this remarkable woman. By the age of thirteen she had mastered the arts of housekeeping which in later years she valued so highly that she sought to have them classed among subjects for school instruction. She early determined the general object of her life work, and her young womanhood was filled with purposeful preparations for it. Love of home was a dominating instinct and household arts and household management were among her youthful gains, while earnestness and deep faith were her strong characteristics.

Mrs. Richards was in every sense a self-made woman. While her early surroundings were not characterized by poverty, she was her own supporter. She acquired Latin at school, for example, so well as to gain her way to higher education through teaching it. She also was an attendant in her father's store and in the intervals between store-keeping, housekeeping and teaching, she prepared herself for college. This was before the days in America of higher education for women. There was no Radcliffe, no Smith, no Wellesley, and Vassar had only recently opened. She early made up her mind that there was a mission for her above either the keeping of a store or the teaching of a village school. She had a feeling of power within her and accordingly prepared herself for college.

Much of the story of her college days in this interesting volume is from her own letters. The two years of delight, of pure joy at the conditions she found, are outlined, and through these collections, there is preserved an interesting sketch of college life and college customs of the day. The diary sets a date for some things; for example, there is this interesting little point in manners which the regulations of the college suggested in 1868, "Eat soup noiselessly from the side of the spoon." Her work at college continued with no wasted moments, and here she showed the spirit of leadership that was within her. It was in this same year, nearly a half century ago, that she wrote, "Anything that will take the American woman out-of-doors will be a blessing"; truly prophetic in view of the later day spirit of open-air pursuits and enjoyment. In this volume there is outlined the beginning of the education of women at the Massachusetts Institute of Technology. In January, 1871, Mrs. Richards was admitted there as a special student in chemistry, and President Runkle himself introduced her to the only other woman in the building, Mrs. Stinson. It is very interesting that this acquaintance should have been continued through forty years, and that both of these women should have passed on in the same month, and practically still in the work.

The volume outlines in a charming way and from enormous resources, the beginnings of many movements in which Mrs. Richards was interested. The woman's laboratory for example, which she advocated as early as 1875, expressing then a belief that the governing board of the Institute would give the space for such work if the apparatus and books could be furnished by others. The result of this was the first laboratory of the kind in which the Woman's Education Association coöperated with the Institute. This work was an instant success for in its initial year twenty-three women students were admitted.

So interested was she in this work that during the next seven years she not only taught in the laboratory herself without compensation, but gave to it a substantial money donation each year and there was more in it than either the teaching or the pecuniary aid involved. This ministering angel, sympathetic with women at a time when there was little known and, consequently, little taught about sanitation and hygiene, was a power in advising the students about their health and in caring for them when they were ill. Besides questions of health and expediency, women in those days were handicapped by lack of money. It was not realized that girls should be educated as boys were and when a girl tried to earn money for her education, it was more difficult through the smallness of her pay. Seeing this difficulty, Mrs. Richards set about to secure assistance for these women and it is true that many who studied in the Institute during those days were taken into her own home. Shortly after the establishment of this laboratory which the Institute of Technology soon took for its own, Mrs. Richards was given a place on the Faculty and from that time on, in addition to her instructional work, she performed all the duties of Dean of Women, although she was never given that title. These items serve to show how closely related Mrs. Richards has been to the higher education of women. But there was a broader work for her still and in the movement for eugenics she found agreeable occupation and from eugenics she passed on to euthenics, proving herself throughout these movements a missionary of science.

It is unnecessary to take up piece by piece the work accomplished by this remarkable woman, for that is the province of the volume itself, but enough has been said to show its nature and enough to suggest the fullness of her life.

PUBLICATIONS OF THE INSTITUTE STAFF

DANA P. BARTLETT. *Bulletin of the Massachusetts Institute of Technology.* Catalogue. Boston. Vol. 48, No. 1, p. 516. Size 8 vo. December, 1912.

C. B. BREED. Chapter IV of J. A. Droege's "Freight Terminals and Trains." McGraw-Hill Book Co., New York. Vol 1, pp. 465. Illustrated. Octavo. 1912.

EDMUND CLARK and A. G. WOODMAN. The Estimation of Minute Amounts of Arsenic in Foods. U. S. Department of Agriculture, Circular No. 99. July 19, 1912.

H. M. GOODWIN. Conduction in Fused Salts. *Proceedings of American Electrical and Chemical Society.* Vol. 21, pp. 105-117.

HEINRICH OSCAR HOFMAN. "The Metallurgy of Lead in 1910." *Engineering Mining Journal*, Vol. 91, p. 48. 1911.

HEINRICH OSCAR HOFMAN. Review of *Mischen, Ruehren und Kneten, und die dazu verwendeten Maschinen*, by H. Fischer. Spaemer, Leipsic, pp. 90. Illustrations 122. 1911. *American Chemical Journal*, 1911.

HEINRICH OSCAR HOFMAN. Review of "Sicherheitseinrichtungen in Chemischen Betrieben," by K. Hartmann, pp. 312. Illustrations, 254. Spaemer, Leipsic, 1911. *American Chemical Journal*, 1911.

HEINRICH OSCAR HOFMAN. "Lead." The American Year Book for 1911, Appleton, New York, 1911.

HEINRICH OSCAR HOFMAN. "The Metallurgy of Lead in 1911." *Engineering Mining Journal*. Vol. 93, p. 43. 1912.

HEINRICH OSCAR HOFMAN with VLADIMIR WANJUKOFF. "The Decomposition of Metallic Sulphates at Elevated Temperatures in a Current of Dry Air." *Transactions of the American Institute of Mining Engineers.* Vol. 42. 1912.

HEINRICH OSCAR HOFMAN. Discussion of "The Sintering of Fine Iron-Bearing Materials by the Dwight-Lloyd Process," by

J. G. Klugh. *Transactions of the American Institute of Mining Engineers.* Vol. 43. 1912.

HEINRICH OSCAR HOFMAN. Discussion "On the Theory of Blast-Roasting Galena," by C. O. Bannister. *Transactions of the Institute of Mining and Metallurgy.* Vol. 21. 1911-12.

HEINRICH OSCAR HOFMAN. Review of "Die Electrochemischen Verfahren der Chemischen Gross-Industrie," by J. Billiter. Knapp, Halle, 1909. Vol. 1, pp. 284. Illustrations 117. *American Chemical Journal.* Vol. 43, p. 472. 1910.

HEINRICH OSCAR HOFMAN. Review "Die Electrochemischen Verfahren der Chemischen Gross-Industrie," by J. Billiter. Knapp, Halle. Vol. 2, 1911. *American Chemical Journal.* 1911.

HENRICH OSCAR HOFMAN. "Recent Improvements in Lead Smelting." *Mineral Industry.* Vol. 20, p. 469. 1911.

HENRICH OSCAR HOFMAN. Review "Die Electrolytische Alkali-chloridzerlegung mit starren Metallkathoden," by J. Billiter. Knapp, Halle. pp. 284. Illustrations 189. *American Chemical Journal.* 191-.

F. A. LAWS and C. H. INGALLS. The Testing of large Watt-hour meters on Fluctuating Loads. *Electrical World.* Vol. 59, p. 1309 (pp. 2). Illustrated. June 15.

G. N. LEWIS and MERLE RANDALL. A Summary of the Specific Heats of Gases. *Journal of American Chemical Society.* Vol. 34, pp. 1128-1134. September, 1912.

WARREN K. LEWIS and CHARLES ALMY, JR. Factors Determining the Capacity of a Filter Press. *Journal of Industrial and Engineering Chemistry.* Vol. 4, pp. 528-532. July, 1912.

WARREN K. LEWIS and HUGO H. HANSON. A Method for Testing the Mutual Corrosive Effects of Metals. *Proceedings Eighth International Congress of Applied Chemistry.* Vol. 21, pp. 43-51.

RICHARD C. MACLAURIN. Presidential Candidates and the Trust Problem in America. *The Contemporary Review.* London, England. November, 1911.

RICHARD C. MACLAURIN. The Sore Need of Aviation. *Aero Club of America Bulletin*. Vol. 1, No. 7, p. 7 (pp. 1).

R. E. MOORE. The Cambridge Subway. *Engineering News*. Vol. 67, pp. 9. Illustrated. February 1, 1912.

R. E. MOORE. Book Review. *Technology Review*.

R. E. MOORE. The Austin Dam, p. 6; Storage Battery Electrification, p. 55; "Holes in the Air," p. 56; The Boston Subway, p. 78; Improving the Mercury Vapor Lamp, p. 92; A Remarkable Ore-Handling Dock, p. 120; High Voltage Electrification, p. 156, *Science Conspectus*, Vol. 11, Boston, Mass. 1912.

ARTHUR A. NOYES. Qualitative Chemical Analysis. Size 8 vo., 1912.

ARTHUR A. NOYES and B. F. BRAUN. Equilibrium of the Reaction between Metallic Silver and Ferric Nitrate. *Journal of American Chemical Society*. Vol. 34, pp. 1016-1027. August, 1912.

ARTHUR A. NOYES and M. S. SHERRILL. General Principles of Chemistry. Part 11. The Rate and Equilibrium of Chemical Reactions. Pp. 24. Size 8 vo. 1912.

C. H. PEABODY. Propellers. John Wiley & Sons, New York. Pp. 130. Illustrated. Size 8vo. 1912.

C. H. PEABODY. Experiments on the *Fulton* and the *Froude*. *Transactions of the Society of Naval Architects and Marine Engineers*. Vol 20, p. 1 (pp. 12). Illustrated. Size 4to. 1912.

C. H. PEABODY and E. F. MILLER. "Steam Boilers" 2d and 3d Editions both revised and enlarged by Edward F. Miller. John Wiley & Sons, New York City. Pp. 543. Illustrated. Size 6 x 9 page. September, 1912.

A. T. ROBINSON. The Applications of Logic. New York. Pp. 219. Size Crown 8vo. 1912.

G. W. ROLFE. Notes on Commercial Dextrins. *Original Communications, Eighth International Congress of Applied Chemistry*. Vol. 13, p. 237 (pp. 9). Illustrated. 1 diagram.

G. W. ROLFE. The Extension of Polarimetry in Chemical Anal-

ysis. *Original Communications Eighth International Congress of Applied Chemistry.* Vol. 1, p. 433 (pp. 7). September, 1912.

G. W. ROLFE. Some notes on Sugar Manufacture in Porto Rico. American Sugar Industry, *Louisiana Planter*; also in *Original Communications of Eighth International Congress of Applied Chemistry.* Vol. 8, p. 59 (pp. 16).

G. W. ROLFE. Charles X. Dalton. *Science.* Vol. 35, p. 444 (pp. 1½).

G. W. ROLFE. Starch, Glucose, Dextrin and Gluten. (A chapter in *Industrial Chemistry* for the Student and Manufacturer, by Rogers and Aubert.) D. Van Nostrand Company, New York. Vol. 1, p. 667 (pp. 16). Illustrated. 1 Diagram. Size 6 x 9. 1912.

LUDWIG ROSENSTEIN. The Ionization-Constant of Phenol Phthalain and the Effect upon it of Neutral Salts. *Journal of American Chemical Society.* Vol. 34, pp. 1117-1128. September, 1912.

ROBERT H. SMITH. Text-Book of the Elements of Machine Work. Second Edition revised and enlarged. Industrial Education Book Company, Boston, Mass. pp. 208. Illustrations 204. Size 5 x 8. August, 1912.

ROBERT H. SMITH. Text-Book of the Principles of Machine Work. Second Edition revised and enlarged. Industrial Education Book Company, Boston, Mass., pp. 408. Illustrations 441. Size 5 x 8. August, 1912.

WALTER C. SLADE. A Method for Testing Paint Films and Preservative Coatings for Iron and Steel. *Journal of Industrial and Engineering Chemistry.* Vol. 4, pp. 189-198.

ELLWOOD B. SPEAR. The Function of Inorganic Addition Agents in the Electrolytic Deposition of Copper. *Original Communications, Eighth International Congress of Applied Chemistry.* Vol. 21, p. 99 (pp. 5). September 5.

ELLWOOD B. SPEAR, C. CHOW and A. L. CHESLEY. The Coprecipitation of Copper and Carbon by Electrolysis: Oxidation at the Cathode. *Original Communications, Eighth International Congress of Applied Chemistry.* Vol. 21, p. 93 (pp. 5). September 5.

ELLWOOD B. SPEAR and SAMUEL S. STRAHAN. The Determination of Zinc by Electroanalysis. *Original Communications, Eighth International Congress of Applied Chemistry*; also *Journal of Industrial and Engineering Chemistry*. Vol. 4. Illustrations 2. December.

ELLWOOD B. SPEAR. Laboratory Experiments, Division B. (Revised) for Tech. Students. Pp. 36. Illustrated.

PERCY G. STILES. Nutritional Physiology. W. B. Saunders Co., Philadelphia, Penn. Vol. 1, pp. 271. Illustrated. Size 12mo. 1912.

CHARLES M. SPOFFORD. Our New Summer Camp. *Technology Review*. Boston, Mass. November, 1912.

HENRY P. TALBOT. The Privileges and Responsibilities of the Chemical Analyst. *Science*. Vol. 35, pp. 397-404.

M. DE KAY THOMPSON. On the Simultaneous Deposition of Copper and Zinc from Various Solutions not Containing Cyanide. *Metallurgical and Chemical Engineering*. Vol. 10, pp. 458-461 (pp. 3). August, 1912.

WILLIAM H. WALKER. The Relative Corrosion of Iron and Steel Pipe as found in Service. *Journal New England Water Works Association*, Vol. 26, pp. 7-39. *Journal Industrial and Engineering Chemistry*, Vol. 4, pp. 486-488.

WILLIAM H. WALKER and RALPH G. GEGENHEIMER. Some Factors in the Cost of Hypochlorite Production. *Original Communications Eighth International Congress*, Vol. 21, pp. 127-138.

WILLIAM H. WALKER and WALTER A. PATRICK. The Determination of Oxygen in Iron and Steel by Reduction in an Electric Vacuum Furnace. *Original Communications Eighth International Congress of Applied Chemistry*. Vol. 21, pp. 139-148.

WILLIAM H. WALKER. Review of "Corrosion of Iron and Steel" by J. Newton Friend. *Journal of Industrial and Engineering Chemistry*, Vol. 4, p. 349.

WILLIAM H. WALKER. Industrial Chemistry and Chemical Engineering. *The American Year Book*, pp. 628-632. 1911.

WILLIAM H. WALKER and WALTER ARTHUR. The Structure of Galvanized Iron. *Journal of Industrial and Engineering Chemistry*. Vol. 4, pp. 391-402.

CHARLES H. WARREN. The Ilmenite Rocks near St. Urbain, Quebec; A New Occurrence of Rutile and Sapphirine. *The American Journal of Science*, Vol. 33, p. 263 (pp. 14). Illustrations 1. March 1912.

CHARLES H. WARREN. The Barite Deposits near Five Islands, Nova Scotia. *Economic Geology*. Vol. 6, No. 8, p. 799 (pp. 8). December, 1911.

A. G. WOODMAN and LEWIS DAVIS. The Determination of Benzaldehyde in Maraschino Cherries and Maraschino Liqueur. *Journal of Industrial and Engineering Chemistry*. Vol. 4, No. 8. August, 1912.

Statement of Ownership, etc., of the Review

Statement of the ownership, management, circulation, etc., of the TECHNOLOGY REVIEW published monthly except August, September, and October at Boston, Mass., required by the Act of August 24, 1912. Editor, I. W. Litchfield, Massachusetts Institute of Technology; Managing Editor, I. W. Litchfield, Massachusetts Institute of Technology; Business Manager, I. W. Litchfield, Massachusetts Institute of Technology; Publisher, The Alumni Association of the Massachusetts Institute of Technology, 491 Boylston Street, Boston, Mass; owner, The Alumni Association of the Massachusetts Institute of Technology, 491 Boylston Street, Boston, Mass. Known bondholders, none. It is a fraternal and scientific publication.

I. W. LITCHFIELD.

Sworn to and subscribed before me this twelfth day of December, 1912. Walter Humphreys, Notary Public. (My commission expires March 4, 1912.)

NEWS FROM THE CLASSES

1868.

ROBERT H. RICHARDS, *Sec., Mass. Inst. of Tech., Boston, Mass.*

The secretary was glad to receive letters this month from three classmates.—Stewart M. Buck writes from Bramwell, W. Va., in part as follows:

The summer is our best season in the mountains of West Virginia, so that we never leave home from choice at that time—but try to induce our friends to visit us. In the early summer I was called to Alabama to report on coal property and since then I have been making occasional examinations in this state—just enough to keep the rust from getting a deep hold and to persuade me that I am still a young man. Perhaps others are not so easily convinced, as the mountaineers are beginning to address me as “Uncle.”

—We also have word from Whitney Conant for whom life seems to hold much that is pleasant although he feels there are no events sufficiently exciting to interest others. He seems to be looking forward to the alumni reunion next month and hopes to meet the “other six” of our class.—From James P. Tolman we hear of gardening experiences as follows:

About my own recent doings, I have nothing to tell except that my last summer's gardening was more than amusing, as it kept us in sweet corn and lots of other vegetables during the season at our summer home on the hill in Shirley, Mass. We are now eating our own apples and find them satisfying. Mrs. Tolman and I took our oldest granddaughter in the spring and went out to the Grand Canyon of Arizona. We stayed there a week and went to many points of interest on the rim, and with the grandchild I went down to the river, which we found dirty and rapid, but from which the view of the cliffs is very interesting. All of the colored post-cards are moderate in their expressions. The real thing matches up with any of them.

—John M. Little has the sympathy of his friends in his recent bereavement, the death of his wife. He writes of his happiness in his grandchildren and also speaks of his election as a member of the directorate of the Chamber of Commerce, and says, “added to my other duties both private and public, it keeps me pretty busy.”

We add to Professor Richards' notes the fact that he was obliged to undergo an operation last month. He entered the Faulkner Hospital December 12, and returned home December 30. We are very glad to say his convalescence is rapid. [EDITOR.]

1871.

EDWARD W. ROLLINS, Sec., Dover, N. H.

We have only just learned of the death of Dudley A. Dorr, which occurred on January 6, 1912.

1873.

SAMUEL E. TINKHAM, Sec., 126 Thornton Street, Roxbury, Mass.

We print the following from the *Old Colony Memorial* of October 5: Lieut.-Col. Henry L. Ripley, 2d U. S. Cavalry, who was retired for age on September 16, 1912, is a native of Massachusetts, a former resident of Kingston, and was graduated from the Massachusetts Institute of Technology as a civil engineer in 1873, and then served as assistant engineer on the Providence water works until 1876, when he enlisted in Company E, Battalion of Engineers, U.S.A., rising to the rank of corporal. He was in July, 1879, appointed a second lieutenant in the 24th U. S. Infantry; was promoted to first lieutenant in 1884, was transferred to the 3d Cavalry in 1887, promoted captain in 1895, adjutant 3d Cavalry, 1899 to 1903; major, 8th Cavalry, in 1903, and lieutenant-colonel, 2d Cavalry, in 1911. Colonel Ripley is an honor graduate of the Infantry and Cavalry School, 1885; holds the degree of B.S., conferred by the Massachusetts Institute of Technology, 1873; participated in the engagement of San Juan, Cuba, July 1-3, 1898, and in the siege of Santiago until July 17, 1898. He was recommended by a brevet board for brevet major for gallantry at Santiago July 1, 1898, and recommended by Generals Wheeler and Sumner for brevet for most gallant performance of duty under heavy fire at San Juan. He rendered special service, in addition to that in Cuba, in the Philippine insurrection, 1899 to 1902.

He was detailed four years on the general staff of the army in December, 1905, and while in that duty was sent to China on a confidential mission; was assistant to the chief of staff, Philippine division and chief of staff, department of Texas. He has served three tours of duty in the Philippine Islands, and has commanded his regiment, the ports of San Fernando, Luzon, Jolo and Camp Overton in Mindanao, P. I.

His last duty was with his regiment at Fort Bliss, Texas, on the Mexican border.

1875.

EDWARD A. W. HAMMATT, Sec., 15 Water St., Newton Center, Mass.

Information for the new class directory is very slow in coming in.—Among new addresses are the following:—Giov. E. Channing, 304 Federal Building, Seattle, Wash.—Norman S. Patton, 8 South

Dearborn Street, Chicago, Ill.—W. F. Sargent, Commissioner of Public Works, Municipal Building, Oak Park, Ill.—Charles E. Whitney, 116 Sycamore Street, Somerville, Mass.—E. A. W. Hammatt, 15 Water Street, Newton Center, Mass.

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

George W. Kittredge, chief engineer of the New York Central Railroad, is making a trip to the Panama Canal to examine the interesting engineering work in progress at the present time.

Efforts are being made to interest the men to attend the alumni reunion in New York in January and it is hoped that there will be a large attendance.

1881.

FRANK E. CAME, *Sec.*, Metcalfe Apartments, Westmount, Quebec, P. Q.

FRANK H. BRIGGS, *Asst. Sec.*, 22 High Street, Boston, Mass.

Frank Darlington has been seriously ill with heart trouble and confined to his room since early October.

1882.

WALTER BRADLEE SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

The present address of Henry E. Snow is 68 Lafayette Street, New Rochelle, N. Y.—John F. Low now resides at 126 Pleasant Street, Arlington, Mass.—Albert C. Brackett moved some time since to Framingham, Mass.—Thomas B. Carson is now secretary of French & Hecht, Davenport, Iowa.

1883.

HARVEY S. CHASE, *Sec.*, 84 State Street, Boston, Mass.

The following letter has been received by the secretary, from William Fuller who writes from Santa Rosalia, Chihuahua, Mexico, where he has been under the fire of the contending forces:

I have heard from nobody nor seen a paper for a month. Work had been going on until last Friday morning, when we were awakened by volley after volley of firearms, and jumped up to find firing going on all around us between the Federal troops and the Liberals. Fortunately the walls are of adobe through which the bullets could not pass. We barricaded the doors and windows with our trunks and mattresses and when the firing slackened, got to the other side of the house through a side window. Finally, after about two hours a band of insurrectos crept up and surrounded the house, and took the Federals prisoners, leaving one man dying in our kitchen. Five or six of us *Gringos* thought to carry this man to our hospital and got a stretcher and started off. It was down across the railroad where firing was still going on, but we had no idea but that they would let an ambulance corps

pass to the hospital. As it was, we were caught half way there between the two fires and took refuge in an adobe house used for a cement laboratory. This was shortly afterward occupied by the insurrectos and used as a fort and we lay on the floor huddled up in a corner for over three hours with the bullets whistling over our heads. Finally the insurrectos ran away during the excitement caused by a bomb bursting just near the door. The Federals did not know all their enemy had gone, and continued firing on us—even firing more furiously when we stuck out a white handkerchief nailed to a broom stick. Finally we all shouted just as we heard them call out that they should throw another bomb and destroy the building and finally convinced them that the building held nobody but *Gringos*. It was a close call. I don't want anything quite so close again. If the United States intervenes, our workmen, about 4,000, are very liable to rise and massacre the whole crowd of us. We are hoping to get out before then. We keep horses saddled right at our door all the time, ready to ride into the mountains at the first alarm. I have a mine in the mountains and would be perfectly safe there. We are down about 90 feet and getting ore assaying around \$50 per ton. When the revolution is over I think we shall get in some outside capital and develop it and make money.

1884.

HARRY W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

An informal class luncheon at the Technology Club, December 11, brought together Messrs. Appleton, Bridgman, Gill, Mellen, Otis, Prescott, Puffer, Whitney and the secretary. P. S. Morse of Australia had also been expected.—Plans for the New York celebration were discussed.—David Wesson has been a recent visitor, having a son in the first year.

1885.

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Word has recently been received that Capt. John T. Haines, who was with the class of '85 during the freshman year and who afterwards went to West Point, died May 11, 1911. During his stay at the Institute Jack was very popular with the fellows, but after leaving, all intimate relationship was lost.—Announcement was recently made of the engagement of Elizabeth Campbell, daughter of Mr. and Mrs. Lyman Sise of West Medford, to Edward Feeley of Brookline.—The secretary received a call from Harvey F. Dewson, son of Ed Dewson, who is a new student at the Institute this year. The resemblance between father and son is very strong.—Charlie Eaton has been spending the fall and the early part of the winter at his home in Haverhill.—Fiske is actively interested in the Associated Charities. He gives much of his time to this particularly effective branch of philanthropy which is gradually co-ordinating the charities of the city in order to avoid duplication and yet to leave no case of need untouched.—S. Cuyler Greene, who has been located for many years at Bath, Me., changed his location last year to Philadelphia. Mail sent to his new address, however, has been returned and if any member knows

his location the secretary will be under obligations for the information.—A new book "Concerning Sally" written by W. J. Hopkins was recently issued by Houghton, Mifflin Company of Boston, a review of which appeared in the November number of the TECHNOLOGY REVIEW. Other books written by Hopkins are "The Indian Book," "The Meddling of Eve," "Old Harbor" and "The Clammer." The gem of the collection is the latter book which should be found in every library. Its peculiar and charming style has no prototype but it brings to mind some of the productions of Donald Grant Mitchell.—As the REVIEW goes to press a large number of '85 men will be in New York attending the Technology reunion in that city. The courtesy of C. R. Richards in inviting his classmates to luncheon on Saturday will undoubtedly increase the attendance and probably make the gathering one of the largest the class has recently had.

1886

ARTHUR GRAHAM ROBBINS, Sec., Mass. Inst. of Tech., Boston, Mass.

From the *New York Times* we learn of the selection of Austin Lord to occupy the architectural chair at Columbia:

"The selection of Austin Willard Lord as head of the department of architecture at Columbia University, according to prominent architects of the city, will entirely revolutionize the course of instruction at that institution and place the department in the so-called French or modern school of practical architecture as distinct from the method of theory and lectures that has obtained in the past.

"Professor Lord is generally considered as a unique type of the practical architect and an adapter of the French school. He was born in Rolling Stone, Minn., in 1860, and after graduation from the Minnesota State Normal School devoted three years of apprenticeship work in architects' offices in Winona, St. Paul, and Minneapolis. Then he took a three years' technical course at the Massachusetts Institute of Technology, and was awarded the Rotch Scholarship, with a two years' trip abroad, in 1888. He became director of the American School at Rome, and there became thoroughly won over to French architecture. Later he went into business in this city under the firm name of Lord & Hewlett.

"It was on account of his work as architect of the Isthmian Canal Commission of Panama and as chairman of the City Plan Committee of Columbus, Ohio, that Professor Lord was particularly desired to head the courses of practical construction. Among his other works of which cognizance was taken are the McKinley Monument at Columbus, the Soldiers and Sailors' Monument at Albany, the Westchester County Court House, the Masonic Temple of Brooklyn, and ex-Senator Clark's mansion in Fifth Avenue.

"Doubtless Mr. Lord's experience as director of the American

Academy at Rome will stand him in good stead in his management. He is a man of great firmness, a disciplinarian, and yet with considerable personal charm and a reticence of manner and dignity well in keeping with his new position. He is an active member of the Beaux Arts Society, of the Architectural League, and of several clubs. It is fortunate for the students that so busy and well-equipped a professional man has been able to find time for this work.

"The architects of the East are quite familiar and hearty indorseers of such men as Duquesne, Abelard, Arnal, Despradelle, Paul Cret, Hebrard, and Mauxion. Now Mr. Lord is added to the list. He is not a Frenchman, to be sure, but he represents the French architecture, nevertheless, and his work, with that of the others, has greatly helped to influence our own buildings in New York.

"It must be remembered," said Mr. Lord when I talked to him the other day about the French method of teaching architecture, "that the Beaux Arts idea, so called is not a style of architecture, but a method of study, a method of solving or at least of grasping the problem.

"Ever since the time of the great Napoleon the French people have been our leaders in their method, their underlying philosophy, their attack upon their projects. I fear that much misunderstanding of the French method is due to the poverty of the work seen here and abroad; much of it is worthy of but little attention. It is flippant instead of being serious. What I mean is, that the French are not alone advocates of modern Renaissance, or of the revivification of Italian ideals and methods. They are just as active in reproducing the Gothic school, and of following in the footsteps of the architects who practiced in the reign of Louis XIII., Henry II and Francis I."

1887.

EDWARD G. THOMAS, *Sec.*, Kewanee, Ill.

Mr. and Mrs. Julian A. Cameron sailed from New York on October 12 on the S. S. *Cleveland* for a trip around the world, and Julian advises us that he expects to return sometime in February.—Coburn reports that he is "on the go" as usual, having just returned from a trip to Southern Missouri and a recent trip to Mathis, Ga., in connection with the hydraulic construction going on at these places. He expects to sail in the near future for Buenos Aires in connection with a hydraulic development across the Uruguay River.

1888.

WILLIAM G. SNOW, Sec., 24 Milk Street, Boston, Mass.

S. E. Thompson, consulting engineer, regarding matters pertaining to structural design of steel and reinforced concrete, and to the organization of construction and industrial operation, has established Boston offices at 141 Milk Street. His main office and laboratory will still be maintained at Newton Highlands, Mass.—Louis A. Ferguson, vice-president of the Commonwealth Edison Company, of Chicago, who was afflicted with a painful illness last May, returned to his desk on December 9 and received the cordial greetings of his associates.—The *Boston Herald* of November 11, has the following:

Fitchburg sends to the 1913 Legislature one of the well-known newspaper men of that city, John G. Faxon, for many years correspondent for the *Boston Herald* in that territory. When Mr. Faxon went to Fitchburg for *The Herald* in 1889 his district included the territory along the line of the Fitchburg railroad as far west as North Adams, southeastern Vermont and southwestern New Hampshire. He had general supervision of the news gathering in that territory, and gave his personal attention to many special articles and political discussions in that territory. He was connected with the *Fitchburg Sentinel* for twelve years.

Mr. Faxon made the run this year as a Taft Republican, having been active in the primaries, and won in a three-cornered fight. He was a candidate last year and lost by a slight margin. He is identified with various activities in his home city, having served in the city council for two years of which he was clerk for six years.

1889.

WALTER H. KILHAM, Sec., 9 Park Street, Boston, Mass.

Fiske has offered to donate to the Institute authorities one half of all the Tapestry Brick for facing up the new buildings in case this material is used. He says that he does not know how much material will be required but probably at least 2,000,000 brick will be necessary in which case his gift would amount to \$20,000. This sounds like a good proposition. Fiske has had much success with this brick. Among recent operations in the vicinity of Boston in which this material was used is a group of twenty-four cottages built for the Boston Dwelling House Company at Forest Hills, Mass. Henry Howard, '89, is president of this company.—Alley has extended to the class another invitation to meet for "Afternoon Tea" at the Brewery. Owing to the secretary's absence in Europe this fall the opportunity was not seized as promptly as it should have been but it will certainly be taken up at an early date and due notice will be given.—George A. Orrok, mechanical engineer of the New York Edison Company, has been chosen to deliver a lecture on power-house design before the students' section of the American Society of Mechanical Engineers at the Polytechnic Institute of Brooklyn on the evening of December 7. The lecture will be illustrated and will be devoted chiefly to hydroelectric

generating stations. At the twentieth general meeting of the Society of Naval Architects and Marine Engineers, held in New York City, November 21 and 22, Messrs. William T. Donnelly and George A. Orrok, members of the society, presented a paper entitled "An Electrically Propelled Fireproof Passenger Steamer." This paper is copyrighted by the Society, and with its permission an extended abstract of it is presented in the *Electrical World*. The *New York Sun* of November 26 contains an interesting editorial on this paper. Orrok has also published an instructive pamphlet on "Air in Surface Condensation."—Bixby is recovering from a serious attack of typhoid fever.—The annual dinner this year will be combined with class lunch at the Hotel Plaza, New York, January 18.

1890.

GEORGE L. GILMORE, Sec., Lexington, Mass.

A Boston paper has the following in regard to George W. Fuller:

The Ipswich River water commission gave a hearing yesterday on its tentative recommendations that Salem and Peabody should go into the Metropolitan system for water supply and that Wenham Lake, which is now jointly used by Salem and Beverly, should be given exclusively to the latter.

George W. Fuller, '90, a sanitary engineer of New York, was called by the city of Salem to testify in regard to the feasibility of an additional reservoir at Putnamville. He declared that the quality of the water to be derived from the Ipswich River and stored in the proposed Putnamville reservoir and then mixed with the waters of Wenham Lake would be superior to that of the Metropolitan system and that the cost would be far less. The hearing was continued.

1891.

HOWARD C. FORBES, Sec., 88 Broad Street, Boston, Mass.

Nathan Raymond Pratt who died October 7, 1912 was born in Sudbury, Mass., August 24, 1868. His early education was obtained in the district and grammar schools of that town. With the exception of a little private tutoring in French and German he prepared for the Institute in the School of Mechanic Arts. After finishing the four years' course at the Institute he remained there as assistant in civil engineering for two years. One year was then spent in Sudbury practicing his profession after which he went to California and spent one year at Leland Stanford, Jr. University in the study of forestry. Returning to New England he practiced his profession in Rhode Island and Connecticut and finally became associated with James P. Bigelow, city engineer, of Marlboro, Mass. Here he remained till called home by the death of his father where he spent the remainder of his life in attending to the family estate.

and sharing with a sister the care of their mother. In 1896 he first showed signs of a mental disease which later overshadowed much of his own life and that of his friends and led to his death. Of a quiet and retiring disposition he was really known but by few. Those few, however, recognized in him a man very high ideals, of strict integrity, and of strong devotion to whatever he considered his duty.

1892.

W. A. JOHNSTON, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

C. H. CHASE, *Asst. Sec.*, Tufts College, Mass.

William Northrup Dudley is enjoying his new house in Newtonville built from plans made in his office. Dudley has during the last summer designed and superintended the construction of a group of buildings for Congressman Weeks at his summer home at Lancaster, N.H. The group consists of a main residence, servants' quarters, stable, garage and a large stone tower used as an observatory. The buildings are situated on the summit of Mount Prospect and at an elevation of 1,000 feet above the surrounding country and command a magnificent view of the Presidential Range and of the Connecticut Valley.—John A. Curtin has served his constituents so well that he has been reelected to serve another term as representative. Curtin also took an active part in the last campaign, his services as a speaker being frequently required.—Herbert S. Potter was very active in connection with the electrical show recently held in Boston. Potter has the agency of the Edison batteries for this district and had a splendid exhibit; he also was responsible for some of the striking features of the illumination of the building.—C. F. Park had a most comprehensive review of a book on "New Demands in Education by James Phinney Munroe, '82," in the last number of the REVIEW.—L. B. Manley who is the engineer in charge of the Boylston Street subway construction reports that good progress is being made.—W. R. Kales, who was in Boston in August, spent a pleasant morning at the Institute renewing old friendships.—The secretary would be very thankful for any class news that any member of the class may give in regard to himself or other member of the class.

1893.

FREDERIC H. FAY, *Sec.*, 60 City Hall, Boston, Mass.

FREDERIC H. KEYES, *Ass't. Sec.*, 739 Boylston Street, Boston, Mass.

1893-1913.

Announcement will soon be made of the plans for the twentieth anniversary celebration next June which will be the biggest event the class has yet held. From all over the country members will

return for the reunion and for some days these fortunate ones will be lost to the world in one of the most delightful spots in New England where out-door sports, both on land and water, will be enjoyed to the limit. Details will be given in later class notices; meantime begin making your arrangements to join the bunch at the June reunion.—The fall outing of the class was held at the Vesper Country Club, near Lowell, Mass., on the afternoon and evening of Monday, October 28. Golf was played by the early arrivals followed by a session at the bungalow where the late comers were warmly and hospitably received by President Carney through whose efforts the class was given the freedom of the club. An excellent dinner was served at seven o'clock at which the class entertained as its guests Mr. H. C. Robinson, superintendent of the Southern Division of the Boston & Maine Railroad, and President J. W. Rollins of the Alumni Association. On the occasion of our fifteenth anniversary, which was celebrated at the Vesper Club, the class was indebted to Mr. Robinson for special courtesies in the matter of train service; and as he is a Tech enthusiast anyway, through having put his son through the Institute, he was most cordially received by the class and in return gave an entertaining talk of half-an-hour on railroad operation. President Rollins spoke of the latest developments at the Institute. Besides the two guests there were present F. B. Abbott of Lynn; W. H. Cadwell, Nashua; E. B. Carney, Lowell; N. P. Cutler, Haverhill; W. B. Page and R. N. Wallis, Fitchburg; and S. A. Breed, H. N. Dawes, F. H. Fay, G. B. Glidden, J. C. Hawley, H. M. Latham, E. I. Leeds, H. A. Morss, C. M. Spofford and J. F. Tomfohrde, from Boston.—Edward M. Hagar was president of the cement show which was held in Pittsburgh in December in conjunction with the annual convention of the National Association of Cement Users. The cement shows, which have been held annually for the past four or five years, usually in New York or Chicago, are large expositions in which cement manufacturers and those engaged in allied industries unite to exhibit all the latest developments in the cement art. Ned Hagar is president of the Universal Portland Cement Company, a subsidiary of the United States Steel Corporation, which has plants at Chicago and Pittsburgh and is one of the largest manufacturers of cement in the world. It is Hagar who has generously offered to give all the cement needed for building the New Technology.—Frederic H. Keyes has become associated with the Sanitary Engineering Company, 739 Boylston Street, Boston. This company was recently formed to carry on a mechanical and electrical engineering practice, specializing in heating and ventilation. The latest important commission undertaken by this firm is that of consulting engineers to the directors of the Port of Boston on the heating, ventilating and power equipments of the new Commonwealth Pier which is to be made ready by next May as the terminal of the

new fast trans-Atlantic steamship service to be established by the Hamburg-American Line. When completed, this pier will be the largest and best equipped in Boston and will surpass in size anything now existing in New York.—S. P. Waldron becomes, on the January 1, contracting manager in charge of the Boston office of American Bridge Company at 120 Franklin Street. Since leaving Tech Waldron has spent his time in bridge work. For about four years he was a draftsman with the Boston Bridge Works and the Pennsylvania Steel Company; two years assistant engineer with the Keystone Bridge Works; two years chief draftsman with the Eastern Bridge & Structural Co. of Worcester, Mass., and of the Berlin (Conn.) plant of the American Bridge Company. In 1902 he became engineer in charge of the Berlin plant where his work was so successful that he was promoted to a position in the American Bridge Company's New York office, which position he leaves to take charge of the Boston office.—Carlton E. Davis has recently been made chief of the bureau of water of the department of public works of the city of Philadelphia (address, Room 790, City Hall, Philadelphia, Pa.). For the past six years Davis has been department engineer, in charge of the reservoir department of the Board of Water Supply of the city of New York, having charge of the construction of the great Ashokan Reservoir in the Catskill Mountains, which work is now substantially completed. For several years after graduating from the Institute, Davis was engaged in engineering work in Manchester, N.H., and Boston. From 1900 to 1904, he was resident engineer in charge of the construction of Cedar Grove Reservoir for the water department of Newark, N.J. For the next two years he was engineer of water works and sewers for the Isthmian Canal Commission, at Ancon, Canal Zone, Panama, in charge of important sanitation work on the Isthmus. Upon his return from Panama he became department engineer for the Board of Water Supply of New York, and has been with that great undertaking since its beginning.

1894.

S. C. PRESCOTT, Sec., Mass. Inst. of Tech., Boston, Mass.

King was recently in Boston and attended the meeting of the Council in the interest of the proposed midwinter meeting and dinner in New York, speaking very pertinently on the subject and presenting well-founded reasons why the association should hold its next dinner in that city. He will have a very prominent position in carrying out the program for this meeting, which is sure to be a great success. In addition to that, he is the nominee for vice-president of the Alumni Association and before this number of the REVIEW reaches its readers, his election will have taken place.—Price was recently in Boston and stopped for a few minutes

at the Institute to meet some of his old friends on the Faculty. The secretary was very sorry not to see him.—Batcheller is spending a few weeks in Boston carrying out some investigations in the laboratories of the mining department. He reports living on a New Hampshire farm even in the winter as far superior to living in the city, and spends most of his time on his estate at Washington, N. H., when not traveling or away on professional work—Guy Lowell has recently returned from Europe. His office is now building the new addition to the Boston Art Museum for which the funds were provided by Mrs. Evans. Lowell himself spends his time between Boston and New York, where he also has an office, although his drafting rooms and the most of his architectural force are located here in Boston.—Phelan was recently elected a member of the school board of Medford after a vigorous campaign. His opponent has been for many years a member of the school board of the city and had become firmly intrenched, but on a platform in which no promises were made as to reforms or political preferment. Phelan pulled out his victory very handily with a good sized majority.—Piper also is one of our members who is interested in the public welfare and devotes some time to public service. He has recently been reelected alderman of the city of Melrose, being unopposed at this election, an evidence, certainly, of the satisfaction which the citizens feel in having a man of his type to represent them.—Prescott announces the birth of a son, Samuel Chase, on November 9.—The secretary wishes to urge upon all who can possibly do so, to attend the meetings in New York on January 17 and 18, and especially to attend all the functions at which the class as a unit is likely to meet. This would be at the class luncheon and presumably also at the banquet, where the classes are very likely to be grouped individually. This should be the first of a series of meetings and banquets away from Boston, since the Institute is now thoroughly representative of all parts of the country.—The marriage of L. R. Moore was announced a few months ago.—While hastening along 42nd street New York, late one evening the secretary met E. F. Hicks, who was hurrying for a Philadelphia train. Hicks is chemist for the Victor Talking Machine Company.

1896.

CHARLES E. LOCKE, Sec., Mass. Inst. of Tech., Boston, Mass.
J. ARNOLD ROCKWELL, Asst. Sec., 24 Garden Street, Cambridge,
Mass.

The following abstract of lecture by Rockwell seems to contain such good advice that all '96 men will want to read it. It was delivered just before Thanksgiving Day. Those who were at the reunion at Squam Lake two years ago will understand how well qualified he is to speak on this subject, and how careful he is in

his own case not to indulge in gustatorial extravagance. "When approaching your Thanksgiving dinner, stop, look and listen," counselled Dr. J. Arnold Rockwell in a lecture delivered last evening at the Evans Memorial at 80 Concord Street. He told his hearers "What to eat and why." "If mince pies, Thanksgiving turkey and rich sauces do not agree with you, leave them alone. Don't eat heartily when tired, nervous, overheated, rushed or angry. Under such conditions rest five or ten minutes before a meal of even the simplest food. Never eat all you can, but save some of your appetite for the next meal. Don't finish a meal with a quantity of ice cream or any other cold food or drink, although a moderate amount of ice cream is wholesome when eaten slowly. The chief essentials in food are that it should be simple, well-cooked, and sufficiently varied to give satisfaction to all the cells of the body." "Food performs two great functions," continued Doctor Rockwell. "First, it repairs and builds up the tissues, and secondly, it produces heat by combustion. Such foods as lean meat, milk, cereals, peas and beans are essentially tissue builders, while the fats and carbohydrates are the energy makers. The man who weighs 200 pounds and is not over five feet is fat, and should accordingly be sentenced to eat about half as much as he wants and to avoid butter, cream, starches and sweets. Elderly persons should have a diet about corresponding to that of young children, taking care to avoid foods that require much mastication."

—W. S. Leland was a visitor in Boston during November. He was a witness in the case of the Southern Pacific Company against the Fore River Company over the steamship *Creole*. His time was almost entirely occupied by the court while he was here, so that his classmates saw very little of him.—The Alumni Fund does not increase as rapidly as the secretary would wish. Many personal letters have been sent out by him without bringing any reply. If the fellows would only stop to think of the amount of time that is consumed by these personal follow-up letters, they would be more prompt in sending their replies.—'96 hopes to have a good representation in New York at the festivities on January 17 and 18. There will be a bunch going from Boston who will plan to travel together if possible. Harry Brown has agreed to go provided he can get someone to act as "guardian" on the "Great White Way." Several fellows have volunteered for the job, knowing that the "guardianship" of Harry always means something doing.—Charlie Lawrence and T. I. Jones are headquarters for '96 men in New York City. Ben Hurd is chairman of the general committee, and certainly '96 ought to be well looked after.—R. E. Bakenhus who had been ordered to Washington, as related in the last REVIEW is now back in the Boston Navy Yard.—On October 19 arrived William Lacy Root, Jr., at the home of his parents,

William L. Root and Mary Denny Root in Pittsfield, Mass. Root Senior's regular occupation for the past ten years has been the retail shoe business in Pittsfield.

1897.

JOHN ARTHUR COLLINS, Jr. Sec., 67 Thorndyke Street, Lawrence, Mass.

T. F. J. Maguire is writing a series of articles for the monthly magazine *Steam* issued by the Ferguson Publishing Company, New York, on the "Use of Coal in Steam Boiler Plants." The first article appeared in the September issue, and the series will deal with every phase of the fuel question.—At a recent meeting of the American Society of Mechanical Engineers Wilfred Bancroft and A. T. Hopkins were elected to membership.

—From the *Gloucester Times* of October 26, 1912, we learn of the death in Utica, N. Y., of Willis E. Parsons, X, and the sad event will be deeply regretted by all '97 men. The secretary regrets that the late day (December 23) when the news came to him, precluded any suitable action being taken at the time of the funeral. The clipping from the *Times* is given below:—

After leaving college, Mr. Parsons became a member of the *Daily Times* reportorial staff, being employed in that capacity for several years, until he resigned to accept a similar position with the *Gloucester Daily News*, which has since passed out of existence.

Some twelve years ago, he removed to Schenectady, N.Y., and secured a fine and responsible position with the General Electric Company.

By his close application to duty, he made good and continued in the employ of the company, until ill health compelled him to relinquish his work.

Five years ago, he underwent a serious operation, from which he never fully recovered, although he continued about his work each day until several months ago. Last August, he had the misfortune to break his ankle, which confined him indoors several weeks. He resumed his employment in November, but on account of the return of the old trouble was obliged to give up work again and seek treatment. He remained in a hospital at Schenectady for some time until recently when he was removed to Utica.

Sunday evening Mr. Parsons received a telegram that his son was very low, but he seemed to rally and improve, according to a subsequent letter received from the attending physician. Nothing more was learned until yesterday's sad message which announced the death of the young man.

1898.

ERNEST F. RUSS, Sec., 68 High Street, Boston, Mass.

An informal meeting of the class together with the dinner was held at the Technology Club, Boston on November 29, 1912. The number of men present was only nine, but we were fortunate in having some outside men like Godfrey, who is now located in Philadelphia and Jacoby who is living in New York. A. A. Packard was also present and it was the first time that many of us had

seen him since we left the Institute. Together with the above was the old guard who usually attend these dinners, that is to say, Coombs, Coburn, Humphrey, Dawes, Peavey, and Russ. The question of getting out a class book for our fifteenth celebration in June was thoroughly discussed, and all seemed to be in favor of this move. It was also urged that all the members possible of the class come to New York for the reunion alumni dinner in January. On a return postal sent out announcing this informal dinner, quite a few of the men signified their intention of being there, and as there are sixty members of our class who are also members of the Technology Club, it would seem as though we stood a good chance of securing the cup for the largest attendance of any class at this reunion. Three members of the class, namely, Gardner, Winslow and A. Sargent are members of the committee of arrangements.—Alvan L. Davis of Pittsburgh, Pa., writes that he intends to come on for our fifteenth celebration in June.—W. R. Strickland is now with the Peerless Automobile people and together with George Wadsworth intends to be present at the dinner in New York in January.—George Wadsworth sailed for Europe on the *Mauretania* the latter part of November for a short trip of about one month.—G. F. Anthony also is planning to come east for the "round up" in June.—G. D. Huntington's address is now 717 Ford Building, Detroit, Mich.—Outerbridge Horsey has a change of address to 153 37th Street, New York City.—Charles E. Lord was recently in Boston and is general patent attorney for the International Harvester Company.—Roger W. Babson sailed for Naples on November 30 to study foreign conditions in connection with his statistical bureau.—Peavey is now vice-president of the above concern.—B. A. Adams has assumed the duties of vice-principal of the Technical High School under the title of "business agent."—H. B. Collins is at Leadville, Colo., and writes that he would be very glad to see any of the fellows who happen to be in that part of the country.—R. H. Danforth has been detailed to lay out a course of post-graduate instruction for graduates of the United States Naval Academy. Also to take charge of the work in steam and mechanical engineering, which all goes to show that Tech men can still show other educational institutions a few things.—Charles S. Dixon, a special student for two years, is now an evangelist.—R. F. Bennett served a year as a member of the school committee in Portland, Me. He has still another year's work before him in that position.—Thomas M. Roberts likes his work very much at the Delaware College which is about an hour's ride from Philadelphia. He is helping to build up the engineering department of that college.—Charles S. Hurter has finished his work in the Lake Superior iron district. On the break-up of the du Pont Powder Company, December 15 last he took charge of the technical field work of the Hercules Powder Company.—T. E. Tallmage took a vacation this fall going to the north of Great Salt Lakes, Utah. Shot ducks,

geese and Mormons.—The last informal dinner we had was probably the last for some time that Coombs, our vice-secretary would attend. As already announced he goes to Edmonton, Alberta, Canada, and it is with deep regret we announce his resignation.

1900.

INGERSOLL BOWDITCH.

RICHARD WASTCOAT.

WILLIAM R. HURD, 2ND.

PERCY R. ZIEGLER.

N. J. NEALL, Sec., 12 Pearl Street, Boston, Mass.

At the last meeting of the Alumni Council, President Maclaurin intimated that it was up to the alumni to provide money to build dormitories and that if the alumni did not provide them they would not be built. Those who have lived in fraternity houses or at colleges where the students live in dormitories, know how easy it is to make acquaintances, and what lasting friendships result from them. At one time the class of 1900 was tied with two others for the last place in the list of classes who had contributed to the Alumni Fund, but now this tie has been broken and 1900 has moved up a step or two in the list. Nearly one hundred and eighty men were graduated in the class of 1900 and over three hundred men were at one time connected with it. All these men have been sent notices asking for subscriptions and only forty-seven (47) men have subscribed up to November 27, 1912. It seems to the committee that many of the one hundred and thirty-three graduates could at least subscribe five dollars a year for five years. This would increase the fund thirty-three hundred dollars, and if those who were connected with the class would subscribe the same amount the class of 1900 could provide funds for at least one section of a dormitory. Leonard's offer to subscribe a thousand dollars if five others would do the same, ought not to be allowed to fall through for lack of interest. The Fund Committee have had several notices returned on account of wrong addresses. If any member of the class has changed his address within a year, he will confer a great favor by sending his new address to N. J. Neall, 12 Pearl Street, Boston, Mass.—There are about fifty-six men who received the class book who have not sent at least one dollar to pay for it. They ought to realize that the class fund could easily stand an increase of fifty-six dollars. The balance on hand December 1, 1912, was \$33.88. Some of this will have to be spent in sending out notices concerning the class luncheon in New York, January 18, 1913. Payments for the book may be made to Ingersoll Bowditch, 111 Devonshire Street, Boston.—The class committee wish to impress upon the members of the class the importance of the Alumni Association meetings and dinner in New York, as it will bring a lot of men together, who cannot come to Boston, and now is the time to take interest in the New Technology.—Zeigler has been very suc-

cessful in persuading the dairymen how important it is to keep the milk clean and sweet and on one of his tours of instruction stopped off at Pittsburgh and saw Kenneth Seaver, who has been made chief engineer and assistant general sales manager of the Harbison Walker Refractories Company. Seaver has a 1913 Cadillac and took Zeigler across the Allegheny Mountains to Altoona and back. Thomas D. Perry, secretary of the Grand Rapids Veneer Works, has a seven-acre lot in a suburb of Grand Rapids where he endeavors to produce the effect of a country estate with a minimum investment of labor and expense. He reports that L. L. Cayvan is still busy keeping the public supplied with Uneeda biscuits.—Franklin N. Conant, electrical engineer of the Chase Shawmut Company, delivered an illustrated lecture on the construction of the Shawmut fuses, before the conference of the Condit Electrical Manufacturing Company held in Boston, October 22 and 23.—William R. Collier, president of the Georgia Railway & Power Co., Atlanta, presided at the convention of the National Electric Light Association, which was held at Tybee Island, Georgia, on August 15.—M. L. Sperry, manager of the Savannah Electric Company took part in the discussions at this convention and read a paper on "Purchasing Coal on the Analysis of B. T. U. Basis." He stated that the Savannah Electric Company was contemplating placing electric vehicles in service.—Bowditch reports the arrival of his second son and third offspring, Charles Pickering 2d, born November 17.—Albert B. Briggs has moved his office from 141 Milk Street to 29 Central Street. James D. Burns, representative from Salem, has desk room with Briggs.—Reimer has just sent Bowditch a check for his class book dated just one year ago. As Reimer had just balanced his books previous to drawing the check he did not realize that he hadn't sent it until he balanced them this year and found that his check had not been cashed. It might be well for other classmates who have not been credited with payment of the class book to balance their accounts and see if they have drawn, but not sent, a check to Bowditch. While speaking of checks, be sure to subscribe to the Technology Fund before doing anything else.

1901.

ROBERT L. WILLIAMS, Sec., 12 Lake Street, Brighton, Mass.

The Decennial Record Book has been received from the press and gives all the class news which I have received to date. Consequently I will not burden our readers with repetition here. A few extra copies, besides those subscribed for, will be sold to those who first ask for them.—Saturday, November 23, Philip A. Potter was married to Miss Melania H. Kunst at Brooklyn, N. Y.—From the *Columbus Despatch* we hear of the wedding of Charles F. F. Campbell in Pittsburgh, Pa., December 26, to Miss Mary O. Dranga. It also gives the following sketch of his work:

Mr. Campbell came to Columbus fifteen months ago to become the executive secretary of the Ohio State Commission for the Blind. Except for the time when he was studying at the Massachusetts Institute of Technology and the University of Leipsic, he has been working for and with the blind. His childhood was spent in the well-known school in England, founded by his blind father, Sir Francis Campbell, who was knighted by Edward VII for his service to those without the power of seeing. Mr. Charles Campbell was largely responsible for the establishment and inauguration of the Massachusetts Commission for the Blind. He started the work of the similar association in Pennsylvania and has edited since its inception, the *Outlook for the Blind*, the only publication of its kind in the world. As secretary of the National Association of Workers for the Blind, Mr. Campbell is in touch with the activities for the blind all over this country. During the past twelve months he has been actively engaged in establishing the industrial work of the Ohio commission which, up to that time, had been largely concerned only with the prevention of blindness.

1902.

F. H. HUNTER, Sec., 281 Park Street, West Roxbury, Mass.
J. ALBERT ROBINSON, Asst. Sec., 87 Milk Street, Boston, Mass.

The first gathering of the class since the reunion last June took place at the Boston City Club on the evening of November 5, election day. A dinner was held with music and informal fun, with such early returns interspersed as were available. The election of Wilson was early conceded by all except the ardent Bull-Moosers, who kept hoping for returns from the West showing a landslide for their ticket. Some of them went down to Newspaper Row after the gathering adjourned to hunt for the remains of that landslide. Those present were Charles Boardman, Everett, Finneran, Fisher, Hall, Hamblet, Hooker, Hunter, Lloyd, Mahar, Manley, Millar, Nickerson, Pendergast, Joe Philbrick, Ritchie, Robinson, Shedd, Stillings, Walker, Wetherbee, Rob Whitney and Wood.—On Friday, December 6, was held the first bowling party of the season, and from the rolling done by some of our shining lights there will have to be more practice before we can feel sure of trimming '05 when next we meet them on the alleys. The scene of our practice bout was the Adams Square alleys and an informal dinner at the Rathskeller preceded. Mr. John Gordon, who will be remembered as giving us a splendid talk at a dinner two years ago, was our guest for the evening and joined in the bowling with great heartiness and good success. The steady rolling of Hall, who put over eight strings all better than eighty, and Woods closing string of 120 were redeeming features of the evening. Wood now holds the class record, his mark being better than that of Mahar, which has stood at 117 for the past three years. Those attending were Fitch, George, Hall, Hunter, Moore, Pendergast, Joe Philbrick, Sawyer, Shedd, Stillings and Wood, besides Mr. Gordon, and Mr. Hardy as guests.—In general news, Jackson is now superintendent for the American Cotton Oil Company, 443 East Sixth Avenue, Cincinnati, Ohio.—Greeley announces the birth of his third child, Rosamond Bradford Greeley, who arrived on October 22.—Farmer has left

the Boston & Maine Railroad and is now with the engineering department of the E. I. duPont de Nemours Powder Company. His permanent headquarters will be at the main office of the company in Wilmington, Del. This fall he has been at Washburn, Wis., in connection with the extension of the plant in the neighboring town of Barksdale, on the shores of Lake Superior.—Mardick is located for the winter in New York, his address being 1415 Fulton Avenue.—Ames has moved from Dorchester to his newly completed home in Milton, Mass., on Upland Road.—Al. Crowell has moved his residence from Foxboro, Mass., to 65 Union Street, Watertown, Mass. He is again in the main offices of the Stone & Webster Engineering Corporation, having completed the field work for the proposed extension of the Boston & Providence Interurban Road to Fall River and New Bedford.—Dunc. Wemyss is again in New York, having accepted a position with Ralph M. Comfort, consulting expert on building equipment.—Stimson is with the engineering department of the American Telephone and Telegraph Co., in New York.—Lieutenant Worcester was married on November 2 to Miss Mabel Leighton Hunter of New York City.—Adrian Sawyer's familiar name now graces the door of the Boston office of the George A. Fuller Company with the words, "General Superintendent" annexed.—Manley has completed his work on the sewage basin at Nantucket and is now engaged on work in New Bedford.

1903.

MYRON H. CLARK, *Sec.*, 43 Glen Rock Circle, Malden, Mass.
R. H. NUTTER, *Asst. Sec.*, Lynn, Mass.

Ralph Howes 105 West 40th St. New York is the New York man who has been chosen chairman of the '03 committee in connection with the alumni reunion in New York in January. Write to Howes that you plan to attend and he will look out for your hotel accommodations, etc.—W. H. Adams has changed his address from China to Throop Polytechnic Institute, Pasadena, Cal.—Fred Olmsted's letter head shows him as a chemical engineer, Oregon City, Ore.—Caspar Schmidt, now with the Empire Zinc Company in Mexico is traveling around from one mining property to another, looking out for development work. He visited the East during the month of September.—Roy J. King of 223 Midland Avenue, East Orange, N. J., spent a few days at Thanksgiving in Boston and intends to be in New York to attend the reunion.

KENNETH ENDRES

It was with great regret that we were informed of the death of Kenneth Endres. We were glad, however, to have received the news early enough in order to have notified several of the fellows in time to attend the funeral. Flowers were also sent in the name of the class and a set of resolutions were also forwarded. The fol-

lowing is an extract from a letter from Mrs. Endres:—"In some way will you thank the Class of 1903 for the lovely roses they sent." Endres was born in Boston, May 27, 1882. He died November 24, 1912, of diabetes, at his home on Adella Avenue, West Newton. He was married in 1910 to Helen Morgan Cross, of Jenkintown, Pa., and leaves a son, Kenneth, born a year ago. After graduation, he was for a time with the Boston Elevated Railway Company; then with the American Telephone & Telegraph Co. in Boston and later in New York. In 1910 he went with the Western Electric Company, specializing on railroad telephone signalling. Besides his widow and son, his father also survives him. The funeral was held at Forest Hills Chapel, November 27, 1912.

1904.

EVERETT O. HILLER, *Sec.*, 12 Dane Street, Jamaica Plain, Mass.
ADDISON F. HOLMES, *Asst. Sec.*, 7 Holborn St., Roxbury, Mass.

It was with no little chagrin that the secretary allowed the last REVIEW to appear without class news and right here would quote from Charlie Haynes' letter of December 9 given below:

I hope that your letter will bring in a lot of interesting dope. I certainly enjoy reading about the crowd and realize what a joke it must be to GUESS what they are doing if they don't ever write and tell you.

—Charlie's appreciation of a situation was always keen and his manner of expressing it most apt. His letter addressed to the secretary follows.

I am still slaving it with the Michigan Rubber Company, trying Burbank-like, to make the plum tree bear two melons where the thorns cannot spring up and choke them (as it were). I am afraid that if we should meet at tennis now I had best default. I have played once only since June, but I have got in a good bit of golf and occasionally for a few holes I have made the "Colonel" a bit uneasy, but he always gets me sooner or later.

When I was getting to work at seven in Cambridge I thought I was killed, but here owing to the difference of sun and standard time, the factories start at 6.30 standard and I'm the guy that comes in just after the whistle blows, puffing and half asleep. This would be a perfectly good city to live in except for the fact that with all kinds of chance for sailing nobody goes out, although at Detroit and Buffalo there is considerable. The local idea is that the squalls are possessed of such terrific dynamic proclivities, that 'twere madness to go outside the breakwater. They undoubtedly know, but I think that if a few of us "deep-water" sailors like yourself, Holmes, Holcombe and a few others could get any kind of a craft we could show at least how Captain Webb looked swimming the whirlpool rapids.

I didn't get a vacation, last summer owing to my change of jobs so can't even write you anything of interest outside of work.

I met Pullman, ex '06, at a dance here a couple of nights ago. He was a good sight for me to gaze on.

—It is pleasant to welcome back to the fold some good fellow who has for some time been out of touch with class affairs as is the case with W. H. Hyde who writes from 5 Cutler Avenue, Cambridge, Mass:—

If you were to ask how much I had done for the Institute since leaving, perhaps the most I could point to would be my connection with the Washington, (D. C.) bowling team some two or three years ago. The Philadelphia team challenged us and so we duly prepared and awaited their coming with anxiety. Meeting them at the depot we inquired if they had dined and finding that they had not, we awaited their pleasure in the matter.

One fellow remembered having had some imperial crabs at "Harveys" some years before and so to "Harveys" we went, with the very obvious result that when the dinner was over, it lacked but a few moments of the scheduled time for the match, and of course, our visitors were hardly in condition to do anything so vigorous as bowling! As a result we took them into camp; for our fellows had taken care of themselves. My own connection in the matter was small for I didn't even bowl—only cheered.

My own activities have been somewhat varied since leaving the Institute. An eight-months connection with the U. S. Signal Corps at Washington, D. C., served to acquaint me with various phases of electrical engineering along that line.

Since 1907 I have been with the Navy Department, Washington, D. C., having charge of the electrical engineering features of the apparatus that controls the guns in our turrets. The work has been interesting in many ways and one summer an opportunity was afforded to take a trip to England, Germany and France in that connection.

At present I am at Cambridge doing some special research work.

—We gather from his letter-head that N. M. Johnson, Course I, is managing some theatrical interests in Randolph and Northfield, Vt. From the latter town he writes:

In reply to your request of December 5, I send you the following "modest" statement of my work since graduation.

I went directly from Tech, June, 1904, to Panama with the Isthmian Canal Commission, and remained there until May 3, 1912. The first three years I was on the surveys living in camp most of the time and had charge of a party running the construction canal Zone Boundary. The last five years I was on construction work as general foreman, supervisor and superintendent of construction of Gatun Locks. In this last capacity I had charge of all form work and placing of about 1,800,000 cubic yards of concrete in Gatun Locks. I resigned May 3, 1912, on account of my health and have since been hibernating in northern Vermont. The work in the Isthmus was extremely interesting but hard. I was married some years ago at Middletown, Conn., and Mrs. Johnson lived several years on the Isthmus. Have two boys, four and two and a half years old. The oldest boy has made seven trips between Panama and New York. He was born in Panama.

The life in Panama was very quiet and monotonous, but the work was more interesting and varied, I believe, than could be found anywhere in the world. I knew quite a number of Tech men while on the Isthmus.

—Ovington has retired from actual flying, at least under present conditions in aviation, but makes his position unquestionably clear in the following most interesting communication:

In one of my courses in summer reading at Tech, Tyndall's "The Scientific Use of the Imagination" was on the list. I have forgotten all the other books I read, but that book of Tyndall's made a great impression upon me. And since reading it I have come to the conclusion that the average man, particularly the technical man, is decidedly lacking in imagination.

It is a matter of fact that every great invention is received with incredulity. For instance, Fulton's steamboat was called, "Fulton's Folly," and Stevenson's locomotive was made fun of. It seems that the aéroplane is due for the same treatment, as there is hardly one man in ten thousand at the present time, who has any faith in the future of the flying machine. I will acknowledge that there have been far

too many deaths as a result of man's conquest of the air, but that is all the more reason to believe that sooner or later we shall have a vehicle which will carry us through the air with as great safety, at least, as the means of land locomotion now at our disposal. I have made a careful theoretical and practical study of the whole subject, and I wish to put myself upon record as believing firmly in the future of the aéroplane. Furthermore, I believe in its immediate future, and my object in writing this letter is to urge all Tech men to become thoroughly posted upon the subject before they promiscuously give around the opinion that the heavier-than-air flying machine has no future. A Tech man's opinion is valued in most communities, and hence he should be particularly careful in giving it to know what he is talking about. There may be some of my classmates who are not satisfied with the field of work in which they are now occupied. And in this case I cannot emphasize too strongly the great opportunities in the study of aéronautical engineering. Few, indeed, are the men who really understand the subject, for by far the largest proportion of those who are interested directly in aéronautics today are men who are not, strictly speaking, engineers. In the early development of the practical flying machine, the "rule of thumb man" did fairly well, but the time has come when the trained engineer should grapple with the problems which confront the infant science, and who are better fitted to tackle these problems than Tech men? I should be glad to render any assistance I can to Technology men, either of my own class or of any other, particularly in the line of suggesting books to read which I believe to be the best obtainable at the present time. I am glad to see that Tech will shortly have a series of lectures upon aérodynamics. That is a step in the right direction, and it shows progressive Tech spirit. The aéroplane is coming sooner or later, and Tech is indeed wise to "get in on the ground floor." It's in keeping with way Tech always does things.

—Holcomb writes interestingly, although his little hammer is shown at work in places. His knocks are for the good of the cause, however, as neither '04 nor Tech's interests generally have a more loyal supporter than he.

What is 1904 planning to do at the New York celebration? Anything more than to add about fifteen men to 1903's table at the feed? I ask because I am trying to fix things to be there, and I want to find something doing. I suppose Mert Emerson and Stevens, and Galusha and one or two others of the faithful will be on hand to keep Holmes from being sandbagged. I believe the automobile show is there that week so perhaps Charley Barrett will be on hand—if so I hope he has some extra tickets.

Nothing very exciting going on out here. Once in a while someone blows in from Mexico or Chicago with tales of bandits and thugs, but St. Louis has been settled by civilized people for more than a century you know, and that makes a great difference. Everybody says business is dull, meaning there are fewer bankers plunging in new construction with other people's money than during the period closing with 1907. Trade seems to move right along out here, although I am told that collections are slow. The patent business is good so far as I can observe. Certainly I have been busy all the fall. Just at present patent lawyers are wondering how far the courts are going to enforce the new equity rules recently promulgated by the Supreme Court. It looks as though a patent lawyer will have to know some law and the rules of evidence in order to try a case in the future. That is pretty tough. It is bad enough to have to know what constitutes a patentable invention, which is something that nobody knows now except the Court of Appeals of the District of Columbia.

—The secretary was pleased to hear from W. H. Koppleman who is in business as a contractor at Louisville, Ky. He writes:—

I have your letter of the 5th and while there is nothing of particular interest to write about myself, I am glad of the opportunity to call to your attention and to

the attention of other Tech men who may be interested, the remarkable development that is going on in eastern Kentucky where I think there is room for a great many Tech men. There has recently been completed about one hundred miles of new railroad, known as the North Fork Extension of the Lexington & Eastern Railroad Company, which extension runs from Jackson, Ky., to a tract of one hundred thousand acres of coal and timber land owned by the Consolidation Coal Company of Baltimore, Md. Several other railroads are building to it from the east side. This tract of land is in the process of development and it appears that eastern Kentucky will soon be as busy industrially as West Virginia. All this development could be helped by trained men and I am confident that many of the southern railroads such as the Louisville & Nashville, Lexington & Eastern and Chesapeake & Ohio, as well as the new coal company offer good opportunities for a Tech man. It is remarkable how few such men there are in the service of the southern railroads where I think the compensation is as good as in any of the eastern roads and the opportunities better. The coal company that I mentioned above is only the largest and most important and I may say that I did not mention the name of it for advertising because I have no interest in it whatever. There are many other smaller companies which will soon be mining coal, cutting timber, drilling for oil and gas and doing all the less important things that go to develop a new country. For this section of Kentucky is new and, until it was invaded by the railroad company, it was a century behind the times. Some of the people had never seen a railroad, telephone, telegraph line, steamboat or even a city, and missionaries have said it was hard to talk to the natives in a way that they could understand because they didn't know the meaning of such a word as street and the like. Some of this may sound like fiction, but it is fact; and any hearer may judge for himself whether there ought not to be good opportunities for technically trained men who are not afraid of rough living in such a country which has the advantage not only of not being foreign, but of comparative nearness to New York and the East.

—The following letter was received with interest from Henry S. Pitts who writes under his own professional letter head as "Architect, Room 435, Industrial Trust Company Building, Providence, R. I."—

After leaving Tech I went abroad. Most of my time over there was spent in Paris where I studied under Pascal and Duquesne. After a sojourn of about eight months I returned to this country and for three months was in the New York office of Mr. Guy Lowell. From there I went to Washington to work on the office buildings for the Senate and House.

I remained a year there and in the spring of 1906 went to Montreal to take charge of the office of Messrs. Finley & Spence. After a year of very pleasant work in Montreal I received an offer from Messrs. Mauran, Russell & Garden of St. Louis which was so much to my advantage that I closed with them and in the spring of 1907 went out there as designer. In the fall of 1908 I married Miss Kate Du Val. In the summer of 1909 we went to Italy so that I might study. We returned to St. Louis after a four months' absence.

On August 10, 1910, Helen Dorsey Pitts was born. In May, 1912, we removed from St. Louis and came East to Providence where I have opened an office for the practice of architecture.

As you see there is nothing very startling in any of this. "The short and simple annals of the poor" are never thrilling except to themselves.

I might add that I was elected a member of the American Institute of Architects in the spring of 1911.

—From A. C. Lyon, University of Maine, Orono, Maine, was received the following:

I should be very glad to meet old Tech friends in Boston and New York this fall if it were possible for me to do so. However, there is no chance whatever that I

shall be there, so I can only send my best wishes to all. Since graduation I have been employed in various branches of civil engineering work. Before entering Tech I was graduated at University of Maine in civil engineering; have not practiced naval architecture at all. (I am a graduate of Course XIII at Tech.) My first two years out of Tech were taken up with telephone engineering. I worked for the American Telephone and Telegraph Co. and for the Rocky Mountain Bell Telephone Company in Salt Lake City. Then I had about one year of hydroelectric development, since then I have been employed in railroad engineering. For the largest part of last year I was on railroad location in the wilds of Maine, living all last winter in a tent north of Moosehead Lake, Me. I am now employed as instructor of railroad engineering at the University of Maine. Having had no startling adventures or strange experiences, I can only close with my best wishes for the success of every Tech man, and especially for my old classmates of '04.

—The secretary would modestly announce the arrival of Hilliard Hiller, a stalwart son, on December 9.—We have our first word since graduation from W. Brenton Boggs, Douglaston, L. I. It seems he has had many varied experiences since leaving Boston to take his first position with the Eustis Smelting Works, Norfolk, Va. He was sent by that company to their prospects in South Carolina, but later,—“seeking greater wealth and opportunities” he took his chances in Mexico, where he was for a number of years. Failing health drove him to Washington, D. C. After getting on his feet again, he settled in the East and in his letter to the secretary says:

I was really fortunate enough to secure a position under the famous Hereshoffs at the Nichols Copper Company's plant. I was placed in the blast-furnace and converter department. Here we were lucky enough to develop a basic-lined copper converter without depriving the Guggenheims of any of their justly deserved rewards. Just before the basic converter was completed I was married, which made the converter a success. This happened three years ago, and we now have one little baby girl.

HERBERT L. SHORES

The sad news of the death of Classmate Herbert S. Shores has come to us through returned class letter and a simple notice stating that he “died at Alpine, Cal., October 28, 1912, aged 30 years, 10 months, of pulmonary tuberculosis.” Our sincerest sympathy goes out to those close to him and our great regret at the loss of a fellow-classmate.

1905.

GROSVENOR D'W. MARCY, Sec., 246 Summer Street, Boston, Mass.

J. B. Reinhardt reports that he “is now the daddy of a fine baby girl, six mnths old. Reinhardt is with the New York Central, and is located at 41 Joseph Avenue, Rochester, N.Y.—Ralph B. Fay writes:

Was married on September 18 to Miss Margaret Pascoe of Carnegie, Pa. Am still in the screw-machine products business, at Elyria, Ohio and enjoying life as much as possible under present rush conditions.

—Roy Allen writes from Villa Escobedo, Chihuahua, Mexico, on December 17, as follows:

We have been working the mine as hard as possible to take advantage of the high price of silver, and the results have been fairly satisfactory. There has been trouble with bandits and thieves around here, but nothing serious for several weeks.

Three weeks and a half ago I went up to Tennessee to attend a directors' meeting. The afternoon before I left, the train on the Parral branch was fired into by bandits and then robbed. Two of the passengers were killed and five wounded. Some twenty-five or thirty shots were fired at our train on the main line to Chihuahua, but no one was hit, and the engineer did not stop. Travel in this country is not yet quite safe, but I think conditions are improving slowly.

A little item of personal news that has recently been given out is the announcement of the engagement of Miss Grace M. Hoxie, daughter of Mr. and Mrs. F. E. Hoxie, of Cambridge, N. Y., to Roy Hutchins Allen. She is a graduate of Mount Holyoke, class of 1910. If everything goes well, and conditions in this country continue to improve, we hope to be married within a couple of months.

—Elmo C. Lowe was married on October 9 to Miss Florence Stillwagen Gilliss, of Washington, D. C. Lowe writes that they are now living at 1205 Michigan Avenue, Evanston, Ill., and that his firm, consisting of J. Carlisle Bollenbacher and himself, have recently been appointed supervising architects for the Northwestern University.—Mr. and Mrs. Sidney L. Cole announce the arrival of Miss Eleanor Cole, on December 20.

—Henry F. Lewis writes from Winnipeg, Can., that he is still working real estate and insurance out there with good results; is not married, but has hopes.—Frank Riley has moved back to 77 Rockview Street, Jamaica Plain, Mass. He is still with the commercial engineering department of the New England Telegraph & Telephone Co.—Chester R. Shaw is taking graduate work at Brown University, department of education, for the degree of A.M. His address is 19 Sanford Street, Pawtucket, R.I.—Asa H. Nuckolls, who has not been heard from in a dog's age, writes from 207 East Ohio Street, Chicago:

Am very much alive and fairly well, and too busy to talk. Expect to see Tech again in January, and talk then if I can find anyone to listen: guess I'll talk anyway. Best wishes.

—Charles R. Adams writes:

I have been in New Hampshire until recently, engaged on White Mountain studies of forest effects on stream flow, under the Weeks Act. At present am in Washington, still with the U. S. Geological Survey, working on the final report on the White Mountain investigation. Roy Johnson is in the building, but except for him I seldom see any of the '05 fellows.

—George Jones writes:

Spent last week in New York on patent business. Saw Flynn, late of the Panama Canal, and other Tech men at the Tech Club. We are getting ready here for the Tech Musical Clubs, although we don't know definitely yet who is coming. Expect to be in New York in January at the big reunion.

—Arthur H. Howland, who is with the U. S. supervising architect has been working in Philadelphia and Nashville during the year, but has now returned to Washington. He had his appendix carved out in June and is now recovering from the operation and the bill.—Edgar L. Meyer, who has been at St. Georges, Bermuda, since 1905, is engaged with other business men of Bermuda in organizing a steamship company to be known as "The Boston Bermuda S. S. Co." to maintain a fast passenger service between Bermudian ports and Boston. They plan to put on the 19-knot twin screw steamer *Prince Arthur* which will accommodate 300 passengers. The schedule will begin February 1, leaving Boston every nine days, making the trip in about thirty-nine hours, and giving tourists a three-and-a-half day stop in Bermuda. This should save passengers from Boston two days' time, and about fifteen to twenty dollars. Calvin Austin is the Boston agent.—Our standing on the Alumni Fund does not show much change at this date from the last figures, which are not nearly up to what they should be. One encouraging fact was the receipt of a good pledge from one of our co-eds in the far away land of Japan. Many of our nearer and masculine neighbors might profit by her good example. Another thing that cheered the secretary was the receipt of our second pledge amounting to \$250, given in a way that showed the true Tech spirit, and makes the secretary wish we could make names and details public, for the good effect it ought to have on those who have delayed to make their pledges.—The class extends its deepest sympathy to the wife and little daughter of Harry W. Upham, who died October 6, under especially sad circumstances. He attended a dinner given by the business men of Malden to President Taft, and was taken sick shortly afterward. It was diagnosed as appendicitis, and he was operated on, but in vain. His death was attributed to ptomaine poisoning.

1907.

BRYANT NICHOLS, Sec., 10 Grand View Road, Chelsea, Mass.
HAROLD S. WONSON, Asst. Sec., 149 East Main Street, Gloucester,
Mass.

Inasmuch as the class Five-Year book will probably be in the hands of the members of the class by the last of January, we will make mention of but five men of the class in these notes. It is with sorrow that we record the death on September 10, 1912, of another one of our classmates, Claude Albemarle Bettington, of London, England, who was connected with the class during its second and third years in Course VI. Since leaving the Institute Bettington had traveled very extensively in all parts of the world, and had also invented several mechanical devices, which had been patented in England. During the last few years he had

devoted most of his time to aëronautics. The following clipping is from the *London Daily Mirror* of September 11, 1912:

Still another double disaster, the second in four days, has overtaken the Royal Flying Corps. Two more gallant officers have lost their lives in their country's service.

The names of the latest victims are—

Lieut. E. H. Hotchkiss, twenty-eight, manager of an aëroplane school at Bristol.

Lieut. C. A. Bettington, thirty-six, formerly a consulting engineer in South Africa. Saw service in the war.

They were flying early yesterday from Salisbury to take part in the Army manœuvres, and all went well until they were near Oxford.

Then their engine seems to have stopped and, according to one witness, there was an explosion. They tried to plane down, but suddenly the aëroplane turned a complete somersault in the air and crashed down.

Lieutenant Bettington, who was acting as observer, was flung clear and fell into a little brook, from which his body was afterwards recovered. Lieutenant Hotchkiss was strapped in the driving-seat, and was found dead pinned beneath the splintered wreckage of the machine.

The late Mr. C. A. Bettington was a South African, one of five brothers, and he had been living for some time with his brother, Mr. Vere Bettington, also an airman, in a West End flat.

A few weeks ago Mr. C. A. Bettington had a bad smash while flying, and on the walls of his flat he had placed the smashed blades of the propeller as a trophy.

The dead airman took the keenest interest in flying, and had brought out several small inventions for improvement of aëroplane engines.

Mr. Bettington formerly practiced as a consulting engineer in Johannesburg.

At the time of the war he joined the Royal Artillery and saw service during the siege of Ladysmith.

By a strange coincidence he received his first flying lesson from Mr. Hotchkiss, his partner in his last flight. He got his airman's certificate on July 31 last.

—On December 12, 1912, Roswell Eustis Sampson' a native of Medford, Mass., was killed in a railroad accident in the state of Washington. Sampson was with the class during the entire four years, and received his degree in mining engineering. After leaving the Institute he became a mining engineer for the Marietta Mines Company, Marietta, Nev., and stayed there until 1909, when he became ore dresser for the Huff Electrostatic Separator Company at Boston. For three years after this he was mining engineer with the Quincy Mining Company at Hancock, Mich. At the time of his death he was assistant professor of metallurgy at Washington State College, Pullman, Wash. Sampson was a modest, quiet sort of fellow, and did not know intimately many of the men in the class, but was held in high regard by all the members of the mining course at the Institute, and by a large number of friends in his home town.—One of the members of our class who should become widely known in the field of physics and electricity is E. L. Chaffee, of Course VI. Since being graduated from the Institute he has been continuously connected with the Jefferson Physical Laboratory of Harvard University. He has won several prizes and fellowships and advanced degrees. In connection with his research he has invented

what is said to be the only present practical method of wireless telephony. With his device, which is small, noiseless, and simple, it is possible to talk with a companion for a distance of one hundred miles with no wire connection whatever. Chaffee teaches several classes in advanced physics in both Harvard and Radcliffe.—Another man of the class who has made a name for himself in another line is D. E. Russ, the chemical "shark." Russ went into business for himself after graduation and as later developed, made a deep study of gelatins, especially those kinds used in connection with photography. It seems that until recently there has been no method known in the United States by which gelatin pure enough to use on photographic plates could be produced direct from horses' hoofs. All the gelatin used for this purpose was imported at a considerable expense. Russ invented a process by which this direct production of gelatin can be effected. He presented his plan to the Eastman Kodak Company at Rochester, N. Y., and after much persuasion, for they had had similar propositions made to them before, they built an experimental plant for him. He showed them that he knew what he was talking about, and now he is employed by the company as superintendent of a new plant for manufacturing the gelatin. This information was not secured from Russ, who is a very modest chap, but from another '07 man who knew the facts.—In still another field of endeavor, G. R. Jones, usually known as "Granny," Course XI, has had marked success. Going to the country for a vacation after graduating, he had been gone only a few weeks, when he received word of a vacancy in connection with the Washington Filtration Plant at Washington, D. C. He was successful in securing the position of second assistant chemist. By virtue of his own ability, and frequently occurring vacancies, it was only a short time before he was chief chemist. This position he held until July, 1912, when he was appointed professor of sanitary engineering in the University of Kansas, Lawrence, Kans. Soon after his arrival there he was appointed engineer for the State Board of Health. In this position he has oversight over all works in the state pertaining to sanitation and sewage disposal, is an adviser for the various cities throughout the state on questions of water and sewage, and has the approval of all plans and specifications for any new work in the state along these lines.

1908.

RUDOLPH B. WEILER, *Sec.*, care The Sharples Separator Company, West Chester, Pa.

CHARLES W. WHITMORE, *Asst., Sec.*, 1553 Beacon St., Brookline, Mass.

I. *On the part of the Secretaries.*

The seventeenth bi-monthly dinner was held at the Boston City Club on Tuesday evening, November 12, at 6.45 p.m. A good

dinner was served and enjoyed, and an informal talk was given by Bill Adams. Bill is home from the Philippines and will return the first part of the year for five years. He says the idea of giving the Islands independence is absolutely foolish, and that that is the way everybody over there feels and they know the conditions. The Islands are rich and coming and we ought to hang onto them. He says they pay for themselves and are not costing the United States a cent now.—Two seven-men teams had a bowling match with plenty of excitement. One more win for the married men. The following were present:—W. A. Adams, B. W. Cary, W. D. Ford, G. E. Freethy, A. W. Heath, W. E. Booth, C. W. Clark, H. L. Chandler, B. S. Leslie, L. Coffin, M. Ames, N. L. Hammond, Carl H. Bangs, A. B. Appleton, E. J. Beede, H. T. Gerrish, C. W. Whitmore. All members will join in offering their heartiest congratulations to "Pop" Gerrish. Miss Ednah Augusta Whitney's engagement to him was announced Christmas.

II. Matrimonial

A. B. Babcock was married on December 18 to Miss Helen Beasley at Brooklyn, N. Y. W. H. Toppan and R. G. Crane were ushers.—E. A. Plumer was married October 17 to Miss Mabel Louise Page of Newbury, Mass.

III. Letters.

The following interesting account of the experiences of Gibbons and Almy appeared in a recent issue of the *Boston Globe*:

Edward T. Almy, Jr., has been stationed in the Western part of the State of Durango near the city of Inde, since February, 1911. He arrived home on April 20, having been forced from the works of the Guadalupe Mining Company, by whom he is employed, and after having been held up and robbed by bandits of arms and horse, and later besieged for seven weeks in the city of Parral.

His friend and classmate, Charles A. Gibbons, Jr., of 33 Plain Street, Taunton, has been located in the southern part of Mexico, in the State of Hidalgo. He arrived home on April 3, having effected his escape before the northern railroad became so crowded with refugees.

Out of troubled Mexico, there arrived home in New Bedford and Taunton last month two young mining engineers, classmates at Technology. After wild adventures they escaped with their lives, the one out of northern, the other out of southern Mexico. Mr. Almy tells what followed.

"On the eventful 21st the coach left Rosario for the mine, with three American passengers, our manager, superintendent and master mechanic.

"When they were about twenty miles from the mine they met the other coach returning to Rosario at a gallop. The perspiring driver appeared to be in great terror. There was one American passenger, who called out for them to look out for their arms.

"'We have been held up by bandits not five miles away,' said he, 'and have been searched. They have robbed us of our arms and money.'

"So the driver of the mine-bound coach turned aside, and in a little gully of an arroyo the Americans buried their three rifles and six-shooters.

"A few miles farther the bandits thundered down the hills upon them, fired a few shots, and halted the coach. They immediately ordered the men to alight, searched them and the wagon diligently and, of course, fruitlessly. Well, they were the most surprised bunch of bandits you ever saw in your life! They could not understand, you see, why three Americans should be driving about a bandit-infested country without weapons of any kind.

"All they found worth stealing was one pair of field glasses. So they let the coach go, and their horses' hoofs beat a parting tattoo on the dusty hills. These men, 300 in number, cloaked their villainies under the name of revolutionists, but were in reality *bandidos*—bandits.

"At 2 a. m. eight of us, mounted on the pick of the horses and armed with such weapons as could be spared at the mines, rode soberly enough away from the little valley at the foot of the Sierra Madre, by a long and desert road, eighty-five miles round about to Rosario.

"We went far from beaten paths, round the hills through seldom-visited valleys. I wore corduroys, carried a blanket, a rifle and a six-shooter, and for food we had six cans of deviled ham between us.

"After nineteen hours of riding, with a single hour of rest, we reached Rosario at 9 p. m. We had chosen fairly level country, but had about twenty miles of rough, hard riding, to avoid so far as possible the hills infested by the robber *bandidos*.

"We remained at Rosario over night. I stayed with an agent of the company. In the morning, we boarded the train for Parral, a city of from 15,000 to 20,000 people, one of the oldest, if not the oldest of the Mexican mining camps. There was no excitement visible in Parral when we entered, except that no trains were running on the main branch, for the rails had been torn up again by the insurrectos. Trains, however, still ran on the branch.

"We hung around Parral for seven weeks. There were about 150 Americans in Parral and among the mines just outside, and there was a foreign club, where we met some fine people.

"In the last week of March, General Villa came into town. He was a former bandit, and now a Government leader. About 400 men rode stragglingly after him. The garrison immediately joined his force, swelling his ranks to 800.

"And then the pay of the soldiers failed. Now 800 soldiers, semi-civilized and all armed, are not pleasant companions in a little place like Parral, when their pay has failed and there is no prospect for more. I guess General Villa feared them, for he enforced the loan of \$250,000 from the banks and merchants, and all was quiet until April 2.

"On that day, in the morning, up came General Salazar, with 200 ragged men at his back, and demanded the surrender of Parral. General Villa declined to give up the town, and at 4 p. m. that same day, fighting began.

"Parral is built in a hollow, and they fired down on us from the hills. The Americans stayed in doors, about twenty of them taking refuge in the American Consulate. The rest of us were in Hotel Hidalgo. We were uninjured, although bullets scarred the adobe walls of the hotel.

"The fighting continued all that night. About 5 o'clock the next morning, General Villa quietly withdrew with about forty men. He neglected to inform the bulk of his army of his plans—and he did not forget the money. That is why he withdrew—he took that \$250,000 with him.

"About 250 were killed, but they were taken away as soon as they dropped. The looters, as they forced their way, in spite of the sharpshooters, through Parral, entered the stores and took what they wanted and dumped the rest of the merchandise into the streets. From a single store, Fischbein Hermanos, some \$50,000 in loot is said to have been taken. Foreigners were not molested and only a few houses were searched.

"They searched our hotel, however. There I lost my horse and arms and my saddle disappeared also. When the looting had stopped, eight of us obtained passports from General Salazar, and left on a military train with the troops for Jiminez.

"The general was quartered in the hefatura municipal, or City Hall. The pass-

ports, which he called *salvos conductos*, were typewritten on bits of paper. They ensured our safe conduct to Jiminez, in the state of Chihuahua.

"We arrived in Jiminez about noon, and left at 6 p. m. on the regular train for El Paso. We were obliged to obtain another *salvo conductor* to the border from General Fernandez. On our way we were held up twice by soldiers searching for loot.

"We reached Juarez at 10 a. m. on April 19. After going through the customs, we crossed the International Bridge and entered the good old United States again. And one of our party had carried through all searching and trouble nearly \$8,000 concealed in his clothes!

"We took a chance to get out of Mexico and won. All the time we were traveling through that troubled country, our lives were in danger. The next day after we escaped, about 250 came out—for the most part better class Mexicans and many Americans. There are two Americans still at Guadalupe—Robert Wilson, who has been in Mexico sixteen years, and Clarence Moon, who was born there. The mine is not now in operation, however.

"We found the border picketed with American troops from El Paso to the Gulf. It is a singular thing that my time was up in two days more, anyhow, and I guess I got out of that country just about in time. Shall I return to Mexico again? Of course—when these troubles have blown over.

"On April 18, I left New Orleans; on April 20, I was home, to learn that Charlie had arrived here two weeks before me."

Down in Hidalgo in the southern part of Mexico, Mr. Gibbons was acting as mining engineer for the Cortes Associated Mining Companies, both at Jacala and at Zimapán.

"In the last Revolution," said Mr. Gibbons, "there was nothing doing in Hidalgo until Madero had captured Juarez. And then, one day, we came near being left out in Cuernavaca while on a sight-seeing expedition.

"Cuernavaca is an-old town, a summer resort in the days of Emperor Maximilian. When we puffed away on our homeward trip, the rebels came out of the hills, ripped up the rails, shot up the engine, and forced it to back into Cuernavaca.

"Two hours later, we tried to make the run again. That time, when they fired on us, they nearly killed the engineer, and we should have had more trouble had not a detachment of Federals appeared.

"A long-distance battle ensued. It was a battle like all their battles. They carefully get out of range, smoke lustily at the cigarettes, and fire off their guns, with the satisfactory assurance that they cannot reach each other.

"On our side, three Federals were killed and a few wounded. I don't know what happened to the Insurrectos—they fled into the mountains, with their wounded and dead. The Federals repaired the track, and we were allowed to return to the city near Cuernavaca.

"I stopped for a time in Mexico City. There was, while I was there, an attack on railroad trains within fifty miles of the city, only a two hours' ride away, which is getting pretty close to Mexico's capital. One day some 250 of them entered the outskirts of the capital itself, looted a ranch and escaped without losing a man. When the Government troops were sure the rebels were gone they sallied forth to find them.

"I left there on the 20th and went to Vera Cruz by train. There are two lines to Vera Cruz—a narrow and a broad gauge. At a small station about halfway to that city, the two lines run parallel for some distance. At this point, we were stopped. The narrow gauge had been torn up and the bridges dynamited. The station man told the conductor that a band of *banditos* had been operating in that country, and to be on the lookout.

"While he was speaking there appeared on the horizon some swiftly moving dots that soon grew into galloping horsemen. The bandits were coming.

"It took us just about two seconds to get out of the station, and you may be sure that the engineer used all the steam he had. The outlaws had evidently

mistaken the time we were to arrive, for by their actions we knew that they had intended to intercept us there.

"I sailed from Vera Cruz for Progreso, Havana and New York on the steamer *Mexico*, and reached home here in Taunton on April 3."

Both Mr. Almy and Mr. Gibbons brought back with them an interesting collection of photographs. The negatives, however, were all destroyed by the *bandidos*—except for a few panoramic films in the possession of Mr. Gibbons.

IV. New Addresses

Monroe Ames, Fair Oaks, Lexington, Mass.—R. J. Batchelder, 91 Fayerweather Street, Cambridge, Mass.—C. L. Batchelder, U. S. Geological Survey, Washington, D. C.—George W. Bailey, 11 Prospect Street, East Orange, N. J.—John H. Bossong, 429 80th Street, Bay Ridge, N.Y.—Chester A. Brown, 15 Beacon Street 10th Floor, Boston, Mass.—Walter H. Byron, W. B. Bryon & Son, Inc., Mercersburg, Pa.—Horace W. Calder, 73 Maple Street, Hyde Park, Mass.—H. Ross Callaway, 151 New York Post Road, White Plains, N.Y.—Elliott S. Church, 1099 Brush Street, Detroit, Mich.—Frederick S. Cram, 82 Bassett Street, New Britain, Conn.—Chester S. Colson, Glen Falls, N.Y.—Russell G. Crane, 134 Fort Green Place, Brooklyn, N.Y.—Henry H. Damon, Bureau of Public Works, Iloilo, P.I.—H. S. Eames, University of Illinois, Urbana, Ill.—Charles G. Ewing, 509 Merchants-Laclede Building, St. Louis, Mo.—Paul R. Fanning, Bureau of Science, Manila, P.I.—George E. Freethy, 19 Marion Road, Belmont, Mass.—G. T. Gambrill, Jr., Woodward Iron Company, Woodward, Ala.—Sherwood Hall, Jr., Auburn Court, Brookline, Mass.—Lucius F. Hallett, Wellesley Farms, Mass.—Daniel F. Harriman, 34-104 West 8th Street, Bayonne, N.Y.—Allen E. Hazard, Bay State Street Railway Company, Campello Car Barn, Brockton, Mass.—Sydney V. James care of H. F. McCormick, 606 South Michigan Avenue, Chicago, Ill.—Orrin S. Lyon, 45 Putnam Street, Everett, Mass.—R. H. Lord, 2831 Warren Avenue, Chicago, Ill.—F. J. Murray, 117 West Street, Utica, N.Y.—Utar J. Nicholas, Baker & Hamilton, Brannan Street, San Francisco, Cal.—Charles D. Putnam, 1150 North Main Street, Dayton, Ohio.—William W. Rawlinson, 234 Grove Street, Chicopee Falls, Mass.—John A. Remon, 6609 Randolph Street, Oak Park, Ill.—Warren D. Spanbler, Hudson, Ohio.—Lieut. Charles M. Steese, Ordnance Department, P. O. address, Fort Hancock, N.Y.—J. B. Stewart, Jr., care of Lehigh Valley Transit Company, Allentown, Pa.—L. W. Thurlow, Bureau of Science, Government Sugar Laboratory, Iloilo, P.I.—T. K. Tse, care of Kwong Mow Tai & Co., 17 Bonham Strand W., Hongkong, China.—Harold E. Weeks, 17 Gramercy Park, New York, N.Y.—Charles Whitmore, 1870 Beacon Street, Brookline, Mass.—Masanao Yendo, Eng. College, Kiushu Imperial University, Fukuoka, Japan.—W. E. Weinz, Westfield, N.J.—H. W. Hoole is assistant general manager, the Lufkin Rule Co., East Saginaw, Mich. Home address 703 So. Washington St. East Saginaw, Mich.

1909.

CARL W. GRAM, Sec., care Walter Baker & Co., Ltd., Milton, Mass.

A few days ago a card was received bearing greetings from M.I.T. '09 in Pittsburgh signed by M. R. Scharff, F. S. McClintock, Benjamin W. Dow, Bradley Dewey and Robert E. Doane, while holding a 1909 dinner. Nicol, Bullens, Laird, Alfred Campbell and Schakne who are also in Pittsburgh were not able to be present. A few days later the secretary ran into Bennie Dow who had come up to Boston to the home office for a couple of days. "Bennie" is as blithesome and talkative as ever—and worse.—J. C. Dort is now in Honolulu with the U. S. Geological Survey, water resources branch and writes:

The first part of October I was asked to report in Honolulu for two years' work here. That was good news to me and those who read the '09 news the first of the year will understand why I routed my journey via Steelton, Pa., then west again, but not alone. Miss Sara R. White and I were married at her home in Steelton, Pa., October 10, 1912. We are at home now to any friends who care to call at The MacDonald.

I wish I could tell you all about this beautiful place, the Garden Spot of the World. I'm not able to compare Hawaii with many parts of the world, but I promise you that anything better is worth seeing.

Kindly give my regards to all the fellows. Address Box 311, Honolulu, Hawaii.

—Jim Finnie says:

For the last six months I've been making jumps that would cause a grandfather flea to look to his laurels for rapidity. If I get two meals in succession in the same town I feel like an old settler. Lately I've been put in charge of the New York office and am also responsible for New England and as far south as Washington. You see that's a nice little piece of real estate to have for a plaything.

Every time I see a Walter Baker ad. in the subway over here I think of you, so you see my heart is still in the right place.

—Harry Whitaker, who is with Stone & Webster, writes from Columbus, Ga., in part:—

I am running around more or less spending from three weeks to a month at each of our properties in the Southeastern district and so am not able to keep in touch with affairs in Boston.—I am constantly running into fellows from the Institute, but so far have only seen George Bowers, who is now in Jacksonville who is a member of our class.—Kindly give my best regards to all the boys. Forwarding address is 118 Hunnewell Avenue, Newton, Mass.

—Here is part of a letter from Steve, who, by the way, sent his usual Christmas present of yearly dues in advance with greetings to the class:—

You may think I am dead. I am not; just buried. Well the election is over so we feel easier about our securities. My principal holdings are in coal. There are five tons in the shed.

Harry Hoole, '08, was in town not long ago. We got together and had lunch to accompany and promote conversation.

After more than two years of effort we have at last got the Rose men interested in cross country running. The number out for the Thursday and Saturday runs is from seven to sixteen. An open event of five miles was held last Friday. I was on the committee, so did not take part. Four of our fellows entered and took first, second, fourth and eighth places.

Now I am busy arranging an interclass race for the 23d. As there is no football game that day we hope to have more than twenty fellows compete. A plan for awarding class numerals has just been adopted, so that the first four men in, will win them. Next year I hope to get a cross country insignia established. By that time we may be able to have some intercollegiate competition. We have found some fine places around the city for hare and hound runs and the three held so far were very successful, quite like old times with Kanaly, Ellis, McCarthy and the rest.

School work is about the same, with the addition of a course in metallurgy and is more interesting than ever. We have twenty freshman chemists this year,—a record. Address 2011 North 9th Street, Terre Haute, Ind.

—Fergie writes in part:

I received your letter of November 1, and am sorry that you feel that you have not got the time to give to the class secretary's duties. But I can understand what you are up against, everyone wants you to do his share.

Everything is fine with me here. This has been a fine year, the wheat crop being a bumper—and wheat is what makes this country. Nothing new has happened and have not heard from any of the fellows. You probably have heard that Ed Hodsdon has a boy baby.

Remember me to any of the boys you see, some day I am coming back to speak for myself.

—The secretary was glad indeed to get a lengthy letter from Garnett Joslin from Maracaibo, Venezuela, S. A. Get out your maps and look it up—I had to. The letter took only about two months to get here, which isn't quite as bad as one written by one of the fellows in San Domingo during October and just arrived, due to the revolution. Although "Joss" particularly requested that his letter should not be published in the REVIEW because he would write a "real" letter later on, it is too good for the waste basket, and leaving out the personal items is about as follows:—

Somewhere between Boston and Los Angeles I received a forwarded letter notifying me of the amount of my debt to the class. I carried it around for awhile, and now I find that when I am really remembering the thing, it is lost. So please turn over the enclosed check (for \$5.00) to the treasurer and place to the credit of my dues account. The check is a personal one on the American consul here as the blooming bank sells checks once a week and I missed the right day. Great system!

Well, I have been very busy and very lazy in spots since our dinner together in Boston.

I went west on some examination work, visited home for few weeks in which time I sure enjoyed life and from there to Nevada. While holding down the lid on a stamp mill trying to get out the mythical quantity of gold the ore was said to yield, I was offered this job and here we are in the tropics.

I am making a geological survey of the Maracaibo and Andes section (Western Venezuela). If we find a rich country there ought to be a great future down here. If not—well, interesting work and no chance to spend money. Which it will be I can't as yet say, as no one knows much about this part of South America. Thirty miles out of Maracaibo one finds the same country, the same little towns and the same people puttering around in them that Pizarro's men must have found when they explored this side of the Andes.

The people charm and exasperate one. In one town we were met by the dignified old gray-haired chief and presented with fruit of fourteen unknown varieties, cocoanuts, chickens' eggs and so on. At the next town we tried to buy some cocoanuts. We were informed that the cocoanuts were not good—that none had fallen during the night and that the boy who usually climbed the trees was out hunting. We then tried to hire a guide to a near-by mine. By the time we had given our family history—told them the United States was almost as large as Venezuela; that we usually took coffee for breakfast; that we wore boots because we liked them and didn't care about seeing the mine anyhow, it was then time for a siesta and they said they *might* be able to find a guide after the heat of the day had passed. And so it goes.

When we are out in the hills—traveling in style with four black boys to drive our burro train, put up our tents, and serve our meals—we are the admiration, awe and derision of the country people, many of whom have never seen a white man. We eat dinner usually under an awning in front of our tent, surrounded by a crowd through which the boys have to fight their way with our food. When I come back I am going to hire out to Barnum & Bailey as a wild animal. To eat a meal without attracting attention will be bad for my digestion.

But it isn't all like that. The country itself as well as the people furnish an infinite variety. Deserts, broad fertile sabañas, forests of huge cedars, mahoganies, swamps, jungles, foothills and snow peaked sierras. And from the curious country folks to the uninterested city is quite as great a sweep.

In Maracaibo there are two pleasant enough hotels and there are four clubs. The American consul has put us up at his club, and evenings we sit out on the roof jingling glasses of many colored ices and talk about the next President, the ball games, the latest Maracaibo scandal; and when the conversation current becomes sluggish—as it always does—probably because there is so much of which we might talk—we drift along with it looking up at the bright stars, at the moving lights on the lake,—the shadowy spectral sails in the harbor.—And so the evening passes.

I have a Stanford fellow with me, to help me translate Spanish and to keep me from forgetting English entirely.

Well this is quite an effusion come to count up the pages. . . . Some day when I have more of interest, based on a greater knowledge of the country, I'll write a real letter.

—Won't some more loyal 1909 men do likewise?

1910.

JOHN M. FITZWATER, *Sec.*, Ovid, N. Y.

G. BERGEN REYNOLDS, *Asst. Sec.*, 142 Highland Avenue, Somerville, Mass.

Marriages.

R. G. Tyler was married to Miss Adelaide M. Tedford of Brookline, Mass., on June 5, 1910.—Ridgway Mill Gillis was married to Miss Marjorie Denison on November 6, at Walla Walla, Wash.—Lawrence Boylston Chapman was married to Miss Louise Bubier Tarbell October 2, at St. Paul's church, Newton Highlands, Mass.—J. Foster Cole was married to Miss Adola F. FitzGerald on November 14.—Donald Voorkis Williamson was married to Miss Eleanor Middleton November 9, at St. Bartholomew's Church, Chicago, Ill.—J. Theodore Whitney was married to Miss Nettie L. Savage of Greenwood October 16, at the Universalist Church, Wakefield, Mass.

Children.

Julia Elizabeth Cox, daughter of Mr. and Mrs. James L. Cox, was born July 29.—Henry Franklin Miller, Jr., son of Mr. and Mrs. Henry F. Miller, 2d, was born November 12.—Robert Ellis Burnett, son of Mr. and Mrs. Robert F. Burnett, was born December 6.

Course I.

Austin B. Mason has completed his work with the San Joaquin & Eastern Railroad and is now assistant engineer on a four-mile tunnel which is a part of the Big Creek power development. This is a water-power project that Stone & Webster are putting through in the Sierra Nevadas. Two power plants, working under a head of 2,000 feet and developing 80,000 horse power each, are to be installed. Permanent address, 200 Devonshire Street, Boston, Mass.—Manuel A. Navarro, Quito, Ecuador. During 1911 Navarro was engineer of the city of Quito. In January of 1912 he was appointed first engineer of the government of Ecuador.—R. G. Tyler writes.

I worked for the city of Waco, Texas, till September, 1910, designing highway bridges to carry electric railways. September, 1910, to June, 1911, was instructor in civil engineering at the University of Texas; June to September, 1911, was in charge of a survey for, and design of, a system of sanitary sewers for Austin, Texas (cost \$320,000); September to December, 1911, instructor in civil engineering at University of Texas; January, 1912, to date, engineer for the State Levee & Drainage Board, my duties being to take care of all engineering problems that come up in reclaiming the overflowed river valleys and the wet coastal plains of the state. I spent a short time in Boston last August but was very busy and did not see any of the fellows. My regards to the boys of '10. The one drawback of being so far from old M. I. T. is that I can't get to the rallies and dinners as I should like to.

—A. B. Merry, Naos Island, Canal Zone. Transitman for the Pacific fortifications of the canal. Merry spent his vacation in the States in September and expects now to remain on the Isthmus until he sees all work completed for the big canal.—John Lodge, Media, Pa. Working in the state of Preble, 100 miles from Mexico City, on twenty-six miles of tunnels for water power development for the Mexican Light & Power Co.—Willie C. Arkell, Canajoharie, N.Y.; production engineer Beech-nut Packing Company, Canajoharie, N.Y. Willie is "the little shrimp that puts cow in bacon."—Carl H. Lovejoy, U. S. Lighthouse Depot, Staten Island, N.Y. With U. S. Lighthouse Bureau inspecting construction along the coast in the vicinity of New York.—John Ahlers was not to be found this time but we think he is in hiding at 174 Woodruff Avenue, Brooklyn, N. Y.—P. W. Taylor, 352 Main Street, Fitchburg, Mass. Taylor is with the Sewage Disposal Commission designing practically all of a new disposal plant. He saw Dutchy Rietschlin in Boston the other day and they had a few cool ones and a steak, German style. Philip says to send

all mail, except duns, to above address.—George L. Mylchrist, 133 Shultus Place, Hartford, Conn.: with Ford, Bull & Sheldon, consulting engineers, Hartford, Conn., designing reinforced concrete and steel structures. Busy all day at the office and in the evenings spends his time and energy in perfecting in his five-months old son the proper way to get rid of the Tech yell.—Rafael J. Farralbos, Havana, Cuba, has left service of the city water supply and gone into private business—building houses and pavements.—This from Bobby Waller, 1810 Regina Street, Harrisburg, Pa.: "Am still pounding the ties as of yore. Not much ahead but straight track, but it's a long road that has no turning."—C. B. Benton, 50 Oliver Street, Boston, Mass., with the New England Telephone and Telegraph Co., has just returned from a four-weeks trip through western Massachusetts where he has been making a study of existing conditions in order to estimate future telephone growth. Benton advises that Brownell was married October 26 at Riverbank Court to Miss Lillian Bowles and that "Don Williamson is soon to meet the same fate"—though we presume that Benton didn't stop to think how his remark sounded; of course, they are going to marry different girls.—Richard P. Watson, 44 Kilby Street, Boston. Watson is doing "fairly well" at a general insurance business in which he has been engaged since leaving college.—Harold Parsons, 79 Mt. Pleasant Avenue, Gloucester, Mass. Since returning from the Panama Canal, Parsons has been with George W. Fuller of New York. At present Parsons is making extensive repairs to the old sewer system at Mt. Kisco, N.Y.—Arthur J. Foote, 140 North Center Street, Orange, N. J., is with the Degnon Controlling Company, on subway work near City Hall Park, New York City.—J. B. Babcock, Milleville, Mass., says that he just announced his engagement to Miss Mildred Willard of Boston. Is that the way they do it in Boston? Congratulations, anyhow! J. B. is resident engineer on the Southern New England Railroad at Milleville.—Kenneth P. Armstrong, 112 Sycamore Street, Somerville, Mass. With Durkee, White & Towne, doing work for the Worcester Consolidated Street Railway Company.—Austin B. Henderson, 8 Lakeview Avenue, Beverly, Mass. With the Boston Transit Commission as assistant engineer. Very busy with two new subways, but ably assisted by many new Tech men.—John Avery, Jr., 45 Perkins Street, West Newton, Mass. Johnny writes:

I have just returned from a nine months' stay in the tropics where I have been with a party of American engineers making a topographical map of the country between Costa Rica and Panama. Camped in the wilderness all of this time and had some interesting experiences. Have as yet made no definite plans for the future, but will probably locate in the vicinity of Boston.

—Louis G. Rowe, 25 Pemberton Square, Boston, Mass. Junior engineer, U. S. army engineers. Located at Boston and engaged

in the inspection of removal of ledges from Gloucester Harbor.—Rudolph A. Smead, 197 Jefferson Street, Hartford, Conn. With Ford, Buck & Sheldon, Inc., consulting engineers.—E. W. Pilling, Danielson, Conn.; with E. Worthington, civil and hydraulic engineers, Dedham, Mass. Dedham address, 453 Washington Street.—Albert J. Beach, 12 Buckingham Street, Somerville, Mass.; with New England Telephone & Telegraph Co., in the plant engineering department, 50 Oliver Street, Boston.—E. O. Christiansen, Capital Building, Honolulu, T. H., is in the Hawaiian Islands as assistant engineer in the U. S. Geological Survey, water sources bureau. In charge of water investigations on Island of Hawaii.—J. M. Fitzwater and Philip D. Ferry, Ovid (N. Y.) Box Company. Closing up work for the season of state highway from Ovid to Romulus. Completion of contract will require all of next year.

Course II

George E. Batchellor writes:

For the past year and a half I have been in the automobile tire business in New York City. The work is very interesting due to the rapidly increasing demand for the goods. It might be of interest to the readers of the REVIEW to know that last year 250,000 to 280,000 automobiles were manufactured in the United States whereas in 1913 the output will be 600,000 which will require an initial equipment of 2,400,000 tires.

—Fred A. Dewey writes that he has the University Fellowship in sociology at Columbia this year.—J. S. Sneddon writes:—

For the past year I have been with J. Pearson & Son Inc., of New York City helping to shift the mud to form a ditch which is to hold the main of the New York State Barge Canal. This contract is ten miles in length. The material consists mostly of sand, gravel and boulders. Our main plant is composed of two dipper dredges which feed a twenty-inch hydraulic disposal boat.

—C. W. Wilson writes that he has taken a position with the Lowell Machine Shop designing and systematizing.—Dallas Brown, Jr., is engaged in work in the sub-marine department at the Fore River Shipbuilding Company, Quincy, Mass.—C. C. Kield writes as follows:—

I suppose that I'll have to come out of my seclusion and come across with the dope on the niche I am filling in this little old world.

At present writing I am feeding lumber to the Hunyacks of wild and woolly Montana. Came out here two months ago and from the outlook I believe that I shall let it hold me for some time to come. There is practically no government land out here that is not being homesteaded and the lumber business is consequently the big business.

Am second-man out here getting a bit of kindergarten work after two years in the wholesale end in the mill city. This yard is one of a line of yards in North Dakota and Montana, so that we are not isolated or alone in the world.

Terry is a little burg about thirty miles from the eastern boundary of Montana on the Milwaukee and Northern Pacific railroads. She does business with a country fifty miles in radius and is growing like a mustache—slowly, but surely.

—Nathan Ransohoff has left the Cincinnati Milling Machine Company and is now managing a can factory.

From the *Call* San Francisco we have:

At a luncheon given by Miss Margaret Belden at the Francisca Club December 20, the engagement was announced of Miss Frances Phelps and Charles Belden.

Course III

Word has just been received by the secretary that F. D. Stewart, Course III was killed December 30th in a mining explosion in Bicknell, Ind.

Course IV

J. W. Northrop, Jr., writes:—

Have been resident engineer on the Rice Institute for Cram, Goodhue & Ferguson since 1910. We have completed four buildings and have about thirty-two more to do. Am having a fine time.

—J. H. Scarff writes that last May he won the traveling fellowship in architecture given by the department and left in May for eighteen months in Europe with one principal stop at the American Academy.—H. E. Akerly is working for the Eastman Kodak Company putting up a building in order to make more "movie" films.—G. W. Gibbs writes that he is teaching architecture in Helena, Mont. He has been there about six months and is enjoying it very much.—John Gray is working on the new city hall annex for the city of Boston.

Course V Retorts

A little more reaction was manifested this time in the reply-postals, but there are still too many in the argon group. Davis reports that "the Course V baby is growing like a weed."—Dunlap, class of 1910½, refuses to go with 1911; he reports prosperity, 215 lbs. weight and a 43-inch waist line; also the entirely irrelevant fact that he is chemist for the Massachusetts Brewing Company,—and, for recreation is consulting chemist of three firms in Boston and also has charge of the steam, gasoline and electrical engineering course at the evening Trade School in Everett. What do you do in your *spare* time Chester?—Higbee is studying in the mathematics department of the Yale Graduate School.—Lord is assistant superintendent of the Magnolia Petroleum Company's refinery at Beaumont, Texas,—adding "the next thing is to get the girl." You will always be *assistant* superintendent if you do that Lordy, but let us know when you pick out the superintendent.—"Doc" Schofield confesses at last to committing matrimony, and reports:

Domestic life is the best yet. That is the word from me. Aside from that I roam about New Jersey and take a peep at Waters, giving him as wholesome a fear of the law as I am able to do such an individual. The remaining moments are spent in thinking of ways in which to reduce the cost of high living.

—Sweet is with the Boston India Rubber Laboratory and lives at 30 Newbury Street in the city of blessed memory.—Trevithick tells us his laboratory, in Vicksburg, has doubled in capacity this summer.—Finally a letter from Hedden strays in with news from a region called North Yakima, Wash., which may account for his apparent non-existence heretofore. He says: “the job consists of picking fruit, packing fruit, and shipping fruit.”

Course VII

F. M. Scales writes that he has been advanced to a better position, and expects shortly to take up research investigations on the importance of moulds in soil, and their relation to agriculture. He will be with the U. S. Bureau of Plant Industry as formerly, and stationed at Washington, D. C. His friends will also be interested to hear that he is now the father of a little daughter, born last October.—F. H. Stover is at present chief assistant chemist and bacteriologist for the Louisville Water Company, and will be glad to hear from any of the old crowd. Address, Crescent Hill Filter, Louisville, Ky.

Course X

The chemical engineers have been a long time getting up to the boiling point, but a light distillate of news was obtained this month.—Almy is perpetrating applied chemistry in Wilmington, Del., as “chemical engineer for the American Vulcanized Fibre Company.”—Bicknell is chemical engineer with the Thermal Syndicate, Ltd. 50 East 41st Street, New York, which makes fused silica ware; “statistics show” that Bick has a full stable of hobbies as usual; he was on exhibition at the International Congress of Applied Chemistry in a very successful “side show” where he performed the daring deed of heating up a silica crucible and plunging it into water!—Bierer claims the title of “chemist with the Boston Woven Hose & Rubber Co.” and gives as his address 83 Newbury Street, Boston; we quote his letter in full: “Happy, that is all.”—Drew writes from 1637 Wilcox Avenue, Hollywood, Cal., he is with the Western Precipitation Company who control some of the patent rights of the Cottrell process. He says:

I have spent some little time at Riverside working on the treator, but at present I am in the office in Los Angeles. I find the work quite interesting and instructive and the firm is a fine one to work for. I have no official title for my position with the firm, but do a little of everything.

—He also reports meeting Beckmann and Breyer, Course]III and Gerity and Davis of Course IV.—Gasche has returned to the 'Stute and is taking the senior work in Course II. He says “it, is hard to get down to studying again after being out for two years.”

His address is 27 Cumberland Street, Boston.—Jacoby was seen around Boston last winter in the disguise of a retired millionaire—evidently only an illusion, for he now writes:

This is 'me'—chemical engineer, Scranton Lace Curtain Company, Scranton, Pa. Still at the same old job,—just got engaged (more to follow soon)—Boston girl,—so Tech helped me get more than a degree. S.B. (Scientific Bachelor) is all right, but me for a scientific married man.

—Noble, Jake, noble! You've long needed a good general manager.—Monto is now assistant superintendent of the Nenigesser (or something that looks like that) Carbon & Battery Co. His address is 1940 East 73d Street, Cleveland, Ohio.—Rosentein is the one real *scientist* of the chemical bunch, he writes from the University of California:—

You probably know the crowd of Tech men in the chemistry department of U. C., but I'll name them over anyway. There are Drs. G. N. Lewis, Tolman, and Bray, Merle Randall, Paul Faragher, E. O. Adams and myself. Lewis conducts all the research, Bray has charge of the freshman work, Tolman teaches theoret, and the rest of us teach here and there. Personally I teach freshman chemistry to about 150 youngsters—we have 450 taking freshman chemistry,—I also give a course in electro-analysis to some seniors. What time is left I spend in researching. The land is just crowded with sunshine, fruit and flowers. There is great exuberance of spirit and enthusiasm for the cause of science.

—Spaans gives his address as 108 Chestnut Street, Brookline, Mass.—Stump has deserted the ranks of chemical engineers and is now with Mr. F. E. Idell of New York, representative of the Cochrane Feed Water Heaters, Separators, etc.—Clapp is transforming all his available energy into steam and electrical power in the southern wilderness,—he has not enough free energy left to send us his address, but rumor has it that the citizens of Valdosta, Ga., are enabled to ride on electrified horse-cars due to the technical skill of Mr. Dudley Clapp—and he was formerly a chemical engineer! Well, good luck on the new job, Dud.

Course XI

Edward Stuart writes from Greenwood, Miss., that he has been contracting for about a year and a half and has been very busy all the time.—R. C. Jacobs, Jr., writes that since June he has been with the Massachusetts Harbor & Land Commission surveying in the Berkshires.—R. W. Horne writes that he is in Milford, Mass., on construction work, laying two and a half miles of pipe and erecting a stand-pipe.—F. M. Arnolt writes:

I am at present instructor in sanitary engineering at New York University and have an office at 63 William Street, New York. Besides my work at the university, I am engaged in sanitary engineering, specializing in water supply and sewage disposal. During the summer I have put in a disposal plant at Westfield, N.J., and I have been engaged on the boundary line of the Bronx Valley Sewer Assessment district. The work has been profitable financially and I can only state that Tech men have splendid opportunities to make good both financially and professionally.

Course XIII

George S. Thomas has accepted a position in the engineering department of Cramp's shipyard.—F. P. Sargent is in the office of the International Steam Pump Company, condenser department, New York City.—E. J. W. Ragsdale writes from Fort Greble, R.I.:—

I am second lieutenant, Coast Artillery Corps, and have been since September, 1910. Have had no "career" good, bad, or indifferent—am just "soldiering."

—David P. Marvin is third lieutenant in the U. S. Revenue Cutter Service.—H. G. Knox is assistant naval constructor in the New York Navy Yard.—Gordon G. Holbrook is assistant to superintendent engineer at the Bath Iron Works.—W. Drake is on duty at the Charlestown Navy Yard, Boston, Mass.—V. T. H. Bien is chief of the material division of the Fore River Shipbuilding Company.—Laurence B. Chapman is now in the designing department of John I. Thonycroft & Co., London, Eng.—Maurice S. Chapin is located with Hopkins & Allen Arms Co., Norwich, Conn.

1911.

ORVILLE B. DENISON, Sec., 7 Wachusett Street, Worcester, Mass.

If by any chance there be any member of the class of 1911 who has not received a letter from the secretary along the middle of December, let him or her sit right down and drop a line to 7 Wachusett Street; for on December 10, the secretary sent out some six hundred letters to all people on the official 1911 roster. It is not necessary to go into the details of this letter here, for it is presumed all have read it. But one thing needs especial emphasis—have you subscribed to the Alumni Fund? If not, why not? If so, have you subscribed as much as you care to? Any one desirous of securing additional pledge cards, either for the purpose of making a brand new subscription or for the purpose of subscribing an additional sum, may obtain same from the secretary. *Do it now!* Nuf ced.—The monster alumni celebration in New York on the 17th and 18th promises to be a "hummer," and judging from the replies already received there will be a lot of 1911 members present. W. H. Martin will be in charge of the 1911 end of the reunion, and he wishes the secretary to urge a big turnout at the class luncheon on the 18th.—Another Christmas reunion in Boston has been considered by the secretary for this year, but instead the secretary deems it advisable to concentrate enthusiasm upon a celebration of some sort either just prior to or just after the Pops in June. Think this over!—Speaking of celebrations, there have been some more 1911 marriages. 'Pears like "everybody's doin' it!" On Wednesday, November 6, William Weatherby Warner—you all know Bill—was married to Miss Edith Kathleen Covington at Riverhead, Long Island,

New York. The young couple will be at home after the first of January at Hotel Elysium, Vancouver, British Columbia.—On November 15 John Foster Cole, affiliated with 1911 during his last two years at the 'Stute, was married to Miss Adola F. Fitzgerald in South Boston.—Early in December, to be exact, on the third, Edward Russell Hall, Course II, married Miss Persis Anna Thompson at Wollaston.—Another December wedding was that of "Johnny" Urquhart, who on the 7th married Miss Lucy Tolman Hosmer at Concord, Mass.—The *Brooklyn Eagle* of November 3, contains the following:

One of the most important announcements of the week was the engagement of Miss Dorothy Noyes and Mr. John Taylor Arms. Miss Noyes is the second of the two daughters of Mr. and Mrs. Henry F. Noyes, her sister being Miss May Noyes. Mr. Arms, who is the son of the late John Taylor Arms, of Washington, is an architect, a graduate of the Massachusetts Institute of Technology, and is with the firm of Carrère & Hastings. Though formerly of Washington, Mr. Arms now makes his home in Manhattan.

—Alberto Bombrini, Course VIII, writing from Genoa, Italy, extends greetings to his classmates. He is now one of the acting directors of a big Italian contracting concern. At present the firm is engaged in contracting an immense water-supply system, to supply three hundred villages. The system begins at the Mediterranean side of Italy and the water goes through about sixty miles of tunnels and hundreds of miles of canals to the Adriatic side of Southern Italy. The system will cost in the neighborhood of 124,000,000 francs. Following the completion of his work in this connection, Bombrini expects to take up a study of the electrical treatment of iron ore. He wishes to be remembered to all his old friends and particularly to his professors. He ends by saying he believes Tech to be the best school in the world! Such letters as his are indeed delightful for the secretary to receive.—Ed Vose is now in Barberton, Ohio, with Stone and Webster, and is living with "Larry" Odell in Cleveland.—The following appeared in the *Marlborough* (Mass.) *Enterprise* of November 11:

Orville Beethoven Denison of Houston, Texas, was a week-end guest at the home of Charles M. Barker, Lincoln Street. Mr Denison is well known as an author and also as a composer of popular songs. He wrote "The Briny Dip," the big song hit of the summer, and numerous other popular songs of the day.

Some bull!—Had a long letter from R. H. Lord, Course VI, recently. He writes from 3048 Fulton Street Chicago, Ill.:

Now that I have become a member of the married men's division and am permanently located, I should like my present address entered in your records.

I was so fortunate in landing a good job in 1911 and in holding it after I got it, that I boosted my courage and "went and did it" in January of this year. No regrets either. Chicago is no place for an unmarried man* with a girl "back home."

Since leaving Tech my work has been very interesting and, I believe, very helpful. I am mechanical assistant with the Griffen Wheel Company, the largest chilled

steel iron car-wheel makers in the world. The title is something of a misnomer, as my work covers electrical and structural engineering in addition to mechanical. I have prepared specifications and plans and installed approximately 1400 H. P. of 25-and 60-cycle three-phase motors with all necessary switchboards, wiring, etc.

The first plant changed was in St. Paul and the work was done in March and April—just the proper time to feel the cold of the northwest. The second was in Kansas City; July and August were the months.

I have run across three or four Tech men recently, but none from 1911. If any of the crowd get out this way I shall be glad to see them.

(* For references, see Bill Salisbury.) O. B. D.

W. C. West, a familiar classmate, is with the Independence Bureau of Philadelphia, engaged in the business of fire prevention and protection. He states in a recent letter that "Bob" Stanley was married September 24 to Miss Alma Bruggeman Emerson of Pittsburgh. Stanley and West are together in business. As a postscript "Bill" West adds:

I was in New Haven a couple of weeks ago, but that's the nearest I have been to Charlie Wirth's since I left the 'Stute. Wiener-snitzel and a seidel of Loewenbrau at Charlie's would certainly look good to me.

—Had a newsy letter from "Groucho" Fryer, one of our benedicts but erstwhile students and member of the Woman Haters Club, a little while ago. "Bert" is making a big noise with the B. F. Sturtevant Company in Readville, and is keeping house at 1877 Hyde Park Avenue, that town. He is now assisting sales manager of the economizers department of the Sturtevant Company, with official title of economizer engineer. The economizer division seems quite apropos for a young married man, Officer, he's *came* back!—E. M. Symmes, a classmate, is still with the du Pont Powder Company. In a recent letter he says:—

Am still with the du Pont Powder Company at their plant here (Kenvil, N. J.), where they are making all kinds of dynamite at the rate of about one million pounds per month, and this is only a small plant, too. Soon we shall be making smokeless powder, also. It is an interesting business and not nearly as dangerous as most people seem to think. When something does go up there simply isn't anything left, but the best part of it is, things don't go up very often. Spent all last winter in Chester, Pa., where I saw a good many at the Philadelphia dinners. Saw Cornell, and some other 1911 men who are with the New York Shipbuilding Company, and Waters, 1910, who got off some brand new puns for my benefit; and Allen, 1911, who had so many jobs that I could not keep up with him; Connolly, who was formerly assistant to Doctor Blanchard, was working for the government; Jenckes, 1910, who started in with du Pont and was sent to Michigan; Sammy Hayes, who has left for parts unknown; and a few others. Was recently in Washington, D. C., with A. C. Long, 1905, who is with du Pont's at Wilmington, and saw St. John and Courtney, 1910, who are with the Government. Saw Lawton, 1911, and Almy at Wilmington, and came up to Boston with Whitcomb, 1911, who had just finished a personally conducted tour all over the United States, all by his little self. Last, but not least, when I got up to Boston I saw Frankie Bishop presiding over the oil lab in Walker. He looked perfectly natural (***)!. There are not any other Tech men in this little God-forsaken hamlet, but one consolation that I have is that I can get into New York every time this place becomes unendurable (which happens about every week.) As regards the matrimonial column, all I have to say is that you keep me strictly out of it. Just score me "Unmarried with absolutely no

prospects," as I saw one other fellow had written. Backwoods Jersey does *not* seem to offer what might be called very exceptional opportunities in that line, and I am quite content to let it go at that.

In closing let it be said that each and every member of our illustrious class will find a great many items of interest in the next number of the REVIEW, for in the interim the secretary will have received replies from the recent letters and postcards sent out. And so, ladies, and gentlemen, with a few address changes, we will close for this evening. *Bon soir!* (Whatever that means.)

Address Changes

Reuben Y. Althouse, 116 Logan Avenue, Denver, Colorado; R. W. Bierer, care of McCarthy Shoe Mfg. Co., Binghamton, N. Y. Suren Bogdasarian, 160 Sumac Street, Wissahickon, Pa.; Alberto M. Bombrini, Vis Serra 4, Genoa, Italy; Herbert Fryer, 1877 Hyde Park Avenue, Readville, Mass.; Luciano Goicoechea, Prado 84, Habana, Cuba; Walter P. Green, Box 245, Ansonia, Conn.; Roy L. Hayward, 62 School Street, Boston, Mass.; Charles F. Hobson, Box 1421, Berlin, N. H.; H. P. Ireland, care of McCarthy Shoe Mfg. Co., Binghamton, N. Y.; James F. Johnson, State Trade School of Bridgeport, Bridgeport, Conn.; Raymond H. Lord, 3048 Fulton Street, Chicago, Ill.; Theodore B. Parker, 105 So. State St., Salt Lake City, Utah; Munroe R. Pevear, 98 Chestnut Street, Boston, Mass.; Edgar C. Savage, 731 Buena Vista Avenue, San Francisco; W. J. Seligman, Ray Consolidated Mining Co., Ray, Ariz.; Ewazo Suzuki, care of Suzuki and Co., Kobe, Japan; E. M. Symmes, Kenvil, N. J.

NOTE. In the next issue of the REVIEW the secretary will print a comprehensive list of addresses, based upon data secured from the above-mentioned canvass of the class.

1912.

RANDELL CREMER, Sec., Mass. Inst. of Tech.

Yes, fellows, we are coming! Slowly still, but better all the time. It won't be long before we have a chapter for matrimonial news just as the others do. These are not all really new, but word of them has just reached us. Willis R. Salisbury, II, was married to Miss Eleanor Warner of Duluth, Minn., Lassell, '11, on April 2.—On November 30, Calvin P. Eldred, VI, married Miss Elizabeth Cassidy of St. John, N. B. The fortunate man is back this year as assistant in the electrical engineering laboratory.—An event of some note took place on Thanksgiving Day when J. W. B. Ladd, Course I, and Miss Alice Gates Boutell of Washington, D. C., were married at the capital city. The bride is the daughter of the United States minister to Switzerland, and many of the guests are prominent in national affairs and in Washington society circles.

Ladd and his wife are now residing in Boston, where the former is completing his Institute course. The very best wishes of all the class follow the newlyweds.—We have also received news of the following engagements: Miss Ida Marion Andrews, of Melrose to Clarence Woodward, Course III, of Wellesley Hills; Miss Hazel A. Rhodes, Simmons '11, to H. I. Pearl, Course I; Miss Esther Sidelinger of Quincy to E. H. Schell, Course II; Miss Edna Swope, Wellesley '13, to F. J. Shepard, Course VI; Miss Dorothy McDowell, of the same class to Randall Cremer, Course I. Miss Mildred H. Tefft of Syracuse, N. Y., to F. W. Barker, Jr., Course X; Miss Vera M. Legg, Wellesley '11, to Harvey S. Benson, Course II; Miss Dorothy L. Doten to Wilbur T. Rogers, Course I.

The Returns

News this time, and lots of it. All this month the replies have been coming in, and we find the class spread all over the country, everyone working hard, having lots of success and finding new opportunities for advancement. This certainly speaks well for the future of the class fund, but unfortunately most of it is future. Confidence is unlimited, however.—Here are two of the most optimistic: From H. W. Hall, Fuller Construction Company, Philadelphia:

I ran into a great bunch of Tech fellows down here. Having all kinds of success.

—From H. H. Catching, London, Ky.

After finding working for others very dull and uninteresting, decided to form a company myself for general engineering and contracting. Doing very well.

—Glidden writes giving his address as Mechanicsville, N. Y.

Am in charge of sixty miles of track work for a new yard here. Am also directing preliminary surveys for another yard, and two grade crossing eliminations.

—“Skipper” Harrington tells us that “Glid” has been married. Can anyone confirm such a report? Not that Skip’s word is not perfectly good and all that, but still.—George Richards, Harrisburg Pa., is much more modest.

Nothing wonderful has happened as yet. To date my time has been spent in getting some of this so-called “experience.”

—Dick Scanlon, Newport News, Va., even more so:

Am doing a little slide rule engineering way down here in the sunny South. No, thank you, I am not married yet, but have figured it out and find that I can just make it in 631 years exactly, but that is reckoning without the raise that I get at the end of the 453d year. Hearty welcome and a good time promised any ’12 man that ever hits here. That long promised bottle of glue might even be pried open on such a momentous occasion. *Prosit!*

—Frank Starr, down in Chihuahua (fortunately I don’t have to pronounce it!) writes;

Have been following Breed and Hosmer's teachings considerably, and on the side sampling in the mines to keep S. E. Reed busy assaying and incidentally away from the señoritas.

—Zip Bent, Schenectady, N.Y., seems to be enjoying himself:

Would that I were back at the dear old "Stute" getting my monthly allowance, than to be wearing two pairs of overalls and sitting in a puddle of oil trying to put a nut on a bolt!

—Here is some good news, from W. H. Lange, New York:

November 23 the class of 1911 invited the class of 1912 to dinner at the Technology Club of New York. H. W. Martin, 1911, was toastmaster of the evening. The '12 fellows present were Appelquest, Brackett, Cary, Cummings, Damon, Keith, and myself. We had a very enjoyable time and heard something about having a joint meeting once a month of members from the classes of 1910, '11 and '12. At each meeting there is to be a speaker, some prominent man, who will speak on some subject, preferably not engineering or technical.

—Lange is now working hard on the 1912 luncheon committee for the big reunion in New York, and it looks as though we are going to make a mighty good showing there. Let's all pitch in and show the older classes what real spirit is.—Here is great news of Zeke Williams from the *Springfield Union* of October 20:

Howard D. Williams, son of Mr. and Mrs. Henry D. Williams of 83 Magnolia Terrace, has been honored by the city of Chicago by his appointment as sanitary engineer of the sanitary district of Chicago. Mr. Williams received his education in the Springfield schools, was graduated from the Central High School, class of 1907, and later from the Institute of Technology. Recently he had been engaged in engineering work in Omaha, Neb. a position he has resigned to accept his important post in Chicago.

—This one is too deep for me, from W. C. Lynch, Chicago:

Met Rube Doble on Michigan Avenue some time ago. Rube says he's an "expert engineer." He whispered it.

—J. I. Murray, New York City, says:

L. A. Matthews, Course VII, is bacteriologist for the Sheffield Farms Lawson Decker Company, largest milk producers in New York.

J. Harrington who was in Course VII last year is in charge of an investigation of school ventilation in New York City.

—The following from Kebbon, who is still with Mr. Freeman in Providence:

With the information I gathered during the summer, I and five other Tech men of earlier classes, are engaged, in compiling a voluminous report, which will contain the very latest and best ideas on educational buildings as well as accommodations for students, and ought to help immeasurably in perfecting a wonderful "New Technology."

Beside this, I am working in conjunction with the Walker Memorial Committee on designs for the Memorial, and have already drawn up tentative plans for its arrangement.

—Isn't he the lucky dog to have such a chance to do so much for the "Stute"? Good luck to you Keb.;

Where Some of the Fellows Are

A. C. Albee, Atlantic, Gulf & Pacific Co., Park Row Building New York City.—A. F. Allen, Board of Water Commissioners, Hartford, Conn.—J. A. Appelquest, 240 Prospect Street, East Orange, N.J.—R. T. Bailey, Ambursten Hydraulic Construction Company, Branson, Mo.—David Baker, 1011 Chestnut Street, Philadelphia, Pa.—Fred W. Barker, Jr., General Chemical Company, Brooklyn, N.Y.—W. H. Baxter, Globe, Ariz.—R. O. Beardsley, P. O. Box 424, Phoenix, Ariz.—R. C. Beéche, San José, Costa Rica.—D. F. Benbow, Curtis & Jones Shoe Manufacturing Co., Reading, Pa.—H. S. Benson, 348 Congress Street, Boston.—D. E. Bent, General Electric Company, 233 Union Street, Schenectady, N.Y.—J. A. Bigelow, 88 Pearl Street, Boston.—W. C. Bird, Box 228, Port Credit, Ontario, Can.—A. P. Bizzozero, 13 Bates Avenue, Quincy, Mass.—T. D. Bond, 147 Milk Street, Boston.—J. A. Boyer, 407 West Building, Jacksonville, Fla.—F. N. Breed, 30 Trinity Palce, Boston.—G. A. Brown, McElwain Chemical Company, Manchester, N.H.—F. H. Busby, 88 Broad Street, Boston.—A. D. Buzby, 54 Hamilton Place, New York City.—H. H. Calvin, Pacific Telegraph & Telephone Co., Santa Barbara, Cal.—C. A. Cary, 71 Broadway, New York City.—H. H. Catching, London, Ky.—J. H. Cather, Eastman Kodak Company, Rochester, N.Y.—L. W. Chandler, Deere & Co., Moline, Ill.—H. W. Codding, Public Service Railway Company, Newark, N.J.—W. Graham Cole, 907 American Building, Baltimore, Md.—A. M. Coleman, 84 State Street, Boston.—J. E. Crowley, Stone & Webster, Victor, N.Y.—L.T. Cummings, Engineering Department, American Telegraph & Telephone Co., New York City.—H. B. Davis, Standard Steel Works Company, Burnham, Pa.—R. W. Davis, Yale Law School,—S. L. Day, Garber & Woodward, Andrews Building, Cincinnati, Ohio.—F. Dierks, 1117 Long Building, Boston.—C. L. Dows, National Electric Lamp Association, 1881 East 59th Street, Cleveland, Ohio.—L. B. Duke, Vulture Mines Company, Wickenburg, Ariz.—C. P. Eldred, Lowell Building, M.I.T.—J. H. Ellis, Walker Building, M.I.T.—W. S. Etheridge, 805 Chicago & Northwestern Railroad Offices, Chicago.—H. B. Fay, 1021 Society for Savings Building, Cleveland, Ohio.—H. F. Ferguson, Illinois State Water Survey, Urbana, Ill.—E. E. Ferry, 40 Center Street, Pittsfield, Mass.—R. M. Ferry, Aluminum Company of America, New Kensington, Pa.—A. V. deForest, Groton, Conn.—F. L. Franks, 40 Central Street, Boston.—A. J. Freedman, 12 N. Montello Street, Brockton, Mass.—J. C. Freeman, 207 East Ohio Street, Chicago.—Constance Fuller, 717 Tremont Street, Boston.—V. L. Gallagher, Central Illinois Public Service Company, Mattoon, Ill.—W. R. Glidden, Boston & Maine Railroad Mechanicsville, N.Y.—P. E. Golsan, Panama California Pacific Exhibition, San Diego, Cal.—L. H. Goodwin, Quincy Mining

Company. Hancock, Mich.—Louis Grandgent, 409 West 15th Street, New York City.—M. F. Granpner, 1308 McAllister Street, San Francisco—W. P. Green, Box 245 Ansonia, Conn.—A. F. Gregory, Castle Island, Boston.—E. H. Guilford, 105 Water Street, Tampa, Fla.—D. J. Guy, Stone & Webster Co., White Salmon, Wash.—J. F. Hakes, Operating Department, Baltimore Ohio Railroad, Baltimore, Md.—H. W. Hall, Fuller Construction Company, Philadelphia.—John Hall, State Board of Health, Boston.—A. R. Hammond, Bingham Canyon, Utah.—J. M. Hargrave, Cincinnati Tool Company, Cincinnati, Ohio.—G. B. Howard, Middle Tennessee Railroad, Franklin, Tenn.—R. E. Hyde, American Writing Paper Company, Holyoke, Mass.—Raymond Jarret, Woonsocket, R.I.—H. G. Jenks, West Acton, Mass.—Milton Kahn, American Writing Paper Company, Holyoke, Mass.—H. E. Kebbon, 815 Grosvenor Building, Providence.—A. H. Kimball, University of Illinois, Urbana, Ill.—M. J. Kimball, 2111 North 12th Street, Philadelphia.—J. C. Knight, 166 Devonshire Street, Boston.—W. H. Lange, New York Conn. R. R., 163 Southern Boulevard, New York City.—J. B. Little, Seaboard Air Line Railroad, Pine Bluff, N.C.—O. C. Lombard, Northeastern Telegraph & Telephone Co., 50 Oliver Street, Boston.—W. C. Lynch, P. & M. Co., 637 Railway Exchange, Chicago.—H. C. Mabbott, Peerless Motor Car Co., Cleveland, Ohio.—A. J. MacDonald, 144 Congress Street, Boston.—W. J. Maguire, 48 Custom House Street, Providence, R.I.—H. G. Manning, Simplex Electrical Company, Cambridge, Mass.—L. A. Matthews, 170 Manhattan Street, New York City.—Clarence McDonough, Post & McCord Co., 44 East 23d Street, New York City.—K. C. McKenney, Stone & Webster Co., 147 Milk Street, Boston.—C. A. McManus, $\frac{1}{2}$ Directors of the Port of Boston.—H. W. Mitchell, Goodyear Tire & Rubber Co., Akron, Ohio.—E. B. Moore, Jones & Samson Machine Co., Springfield, Vt.—C. H. Morrill, Massachusetts Highway Commissioners, 126 Massachusetts Avenue, Boston.—F. L. Mowry, Swift & Co., South St. Joseph, Mo.—W. W. Mowry, Boston Automatic Machine Company, 802 La Salle Building, St. Louis, Mo.—J. I. Murray, Lederle Laboratories, 39 West 38th Street, New York City.—W. J. Murray, Walker Building, M.I.T.—Ernest Nicholson, Room 1712 Tribune Building, New York City.—M. A. Oettinger, 35 Isabella Street, Boston.—F. W. Osborn, Ajo Copper Company, Ajo, via Gila Bend, Ariz.—H. S. Payson, 8 Pine Street, Glen Falls, N. Y.—A. M. Pedersen, Southern Engineering Company, 11 Laurel Street, Hartford, Conn.—C. O. Perrine, Riverside, Cal.—H. Malcolm Priest, Empire Bridge Company, Elmira Heights, N.Y.—R. B. Pulsifer, Engineering C, M.I.T.—J. M. Pettingell, $\frac{1}{2}$ E. H. Rollins & Sons, 200 Devonshire Street, Boston.—A. L. Pyle, 103 Brady Avenue, Washington, Pa.—O. J. Rambler, D'Yonville College, Buffalo, N.Y.—Merle Randall, Chemistry Annex, Berkeley, Cal.—J. W.

Raymond, Jr., %City Engineer, Lynn, Mass.—S. E. Reed, Santa Barbara, Chihuahua, Mex.—A. W. Reid, Union Development Company, Bryson City, N.C.—G. W. Richards, 1427 North Front St., Harrisburg, Pa.—W. T. Roberts, Johns-Manville Company, 99 Greenwood Street, Dorchester, Mass.—S. R. Robertson, 246 Summer Street, Boston.—K. C. Robinson, Engineering B., M.I.T.—J. B. Romer, Sherwin Williams Company, Kensington, Ill.—A. H. Rooney, Altantic Coast Line, Wilmington, N.C.—C. B. Rowley, Heat Laboratory, M.I.T.—W. R. Salisbury, 201 Main Street, S. E., Minneapolis, Minn.—L. M. Sandstein, Chicago Minneapolis & St. Paul Railroad, Chicago.—R. H. Scanlon, 110 28th Street, Newport News, Va.—R. S. Schar, 40th Street and Fourteenth Avenue, NE., Seattle, Wash.—S. Schattschneider 212 Pierce Hall, Harvard University.—E. H. Schell, 262 Newbury Street, Boston.—J. D. Shore, Smith Iron Company, Boston.—W. C. Slade, General Electric Company, Pittsfield, Mass.—C. F. Smith, Swift & Co., Fort Worth, Texas.—F. E. Starr, % Minas Tecolotes y Anexas, Santa Barbara, Chihuahua, Mex.—B. W. Stevens, 33 Purchase Street, Boston.—F. M. Stibbs, F. T. Ley Company, Springfield, Mass.—R. T. Stone, 30 Church Street, New York City.—R. B. Stone, Boston and Maine Railroad, Kennebunk, Me.—R. F. Symonds, Engineering A, M.I.T.—E. W. Tarr, 5 Haynes Street, Hartford, Conn.—W. H. J. Taylor, 506 Bailey Forrel Building, Pittsburgh, Pa.—J. A. Tillinghast, 268 Angell Street, Providence, R. I.—Bates Torrey Jr., South Weymouth, Mass.—D. A. Tomlinson, Room 67, Dearborn Sta., Chicago, Ill.—E. C. Van Syckel, Pennsylvania Steel Company, Steelton, Pa.—N. S. Wade, Y. M. C. A., Athol, Mass.—L. B. Walker, Standard Accident Insurance Company, 141 Milk Street, Boston.—C. W. Webber, Underwriter's Laboratories, 87 Milk Street, Boston.—E. B. Wetten gel, Institute of Industrial Research, Washington, D. C.—R. E. Whipple, Rogers Building, M.I.T.—J. H. White, Travelers Insurance Company, Hartford, Conn.—L. M. White, L. L. Summers Company, First National Bank Building, Chicago, Ill.—C. N. Whitmore, American Steel & Wire Co., Worcester, Mass.—J. E. Whittlesey, Stone & Webster Co., 147 Milk Street, Boston.—R. J. Wiseman, Lowell Building, M.I.T.—D. M. Wyman, Lockwood, Greene & Co., 60 Federal Street, Boston.—A. W. Yereance, MacArthur Brothers' Company, Clanton, Ala.

WHAT TECH MEN ARE DOING

The Technology Club OF NEW YORK 17 GRAMERCY PARK

A Club House For Tech Men *Residents or Non-Residents of New York*

The house is centrally located and is well equipped. An addition is contemplated to provide more rooms for out-of-town members.

MEMBERSHIP—1030

Anyone who has studied or taught at M. I. T. for one year is eligible for membership.

DUES: { Resident Membership . . . \$20.00 per year
Non-Resident Membership . . . 10.00 per year

For application card write to

CHAIRMAN MEMBERSHIP COMMITTEE
TECHNOLOGY CLUB
17 GRAMERCY PARK, NEW YORK CITY

ROBERT H. RICHARDS ORE DRESSING

Makes careful concentrating tests for design of
flow sheets for difficult ores.

491 Boylston St. :: Boston, Mass.

CHARLES T. MAIN ENGINEER

Rooms 817-833, 201 Devonshire Street

Boston, Mass.

LORD ELECTRIC CO. (Electric Contracting)

GEORGE A. RICKER, '86

LORD CONSTRUCTION CO. (Contracting Engineering)

M. Am. Soc. C. E.

LORD MFG. CO. (Electric Manufacturing)

Consulting Engineer

BOSTON (F. W. Lord, '82) NEW YORK

ELLIOTT SQUARE :: BUFFALO, N. Y.

Bell. Tel. Main 1457.

AMASA M. HOLCOMBE, '04

Formerly Assistant Examiner U. S. Patent Office.

ATTORNEY AT LAW

Patent and Trade Mark Causes

WITH

CARR & CARR

PATENT LAWYERS

Rooms 515-526 Roe Bldg.

510 Pine St.

ST. LOUIS, MO.

SAMUEL CABOT

Manufacturing Chemist

Creosote Shingle Stains, Sheathing and Deafening
ing "Quilt," Brick Preservative,

Lampblack, Conservo Wood Preservative, etc.

141 MILK STREET, BOSTON, MASS.

Telephone, Haymarket 11.

Walter H. Kilham, S. B. '89. Jas. C. Hopkins, S. B. '95

KILHAM & HOPKINS

ARCHITECTS :: 9 Park Street, Boston

CHARLES S. GOODING

SOLICITOR OF PATENTS
MECHANICAL ENGINEER

28 SCHOOL STREET :: BOSTON

EDWARD E. HOXIE, '03

ARCHITECT

622 Berkeley Building,
420 BOYLSTON ST., - - - BOSTON

Telephone Back Bay 892. Opp. Rogers Building

BUREAU OF ASSOCIATED GEOLOGICAL ENGINEERS

FREDERICK G. CLAPP, '01 MYRON L. FULLER, '96
BOSTON OFFICE: 131 STATE STREET

Reports on water supplies, bridge and dam foundations, ore deposits, cement and building stones. Analyses and assays.

PITTSBURG OFFICE: 331 FOURTH AVENUE
Examinations and reports on oil, gas, and coal properties.

ELMER A. LORD & CO.
Insurance of every description

145 MILK ST., - BOSTON

Engineering Department

THOMAS E. SEARS, '03

Main 3148 — Telephones — Main 3147

Main 5571 TELEPHONES Main 5572
CHARLES H. JOHNSON, '05

Representing

NEW ENGLAND MUTUAL
LIFE INSURANCE COMPANY
Of Boston, Massachusetts

Oldest Chartered Company in America. Obtain our figures FIRST and not afterward.

176 FEDERAL STREET, BOSTON, MASS.

WALTER B. SNOW

PUBLICITY ENGINEER

Complete management of publicity for engineers and manufacturers in engineering lines.

170 Summer Street :: Boston, Mass.

NATURAL GAS ENGINEER

Expert in Production, Transportation and Utilization of Natural Gas

GODFREY L. CABOT

940-942 Old South Building
Boston, Mass.

ADVERTISING RATES

Quarterly Numbers Only.

Professional Card, - - -	\$ 10 per year.
$\frac{1}{4}$ Page, - - - -	35 " "
$\frac{1}{2}$ " - - - -	60 " "
1 " - - - -	100 " "

Entire Nine Issues.

Professional Card, - - -	\$ 16 per year.
$\frac{1}{4}$ Page, - - - -	56 " "
$\frac{1}{2}$ " - - - -	96 " "
1 " - - - -	160 " "

THE TECHNOLOGY REVIEW, 491 Boylston St., Boston

George A. Ricker, '86 Pres. and Gen. Mgr.

**BUFFALO
TESTING LABORATORY**

Inspecting Engineers
Chemists and Metallurgists

Office

702 ELLICOTT SQUARE, BUFFALO, N. Y.

GILES TAINTOR

COUNSELLOR AT LAW

53 STATE STREET

BOSTON

E. K. TURNER, '70

**CIVIL
ENGINEER**

53 State Street, Boston, Mass.

**BOOKBINDING
IN EVERY STYLE
ALEXANDER MOORE**

Binder to M. I. T.—Museum of Fine Arts, etc., etc.

11 Hamilton Place, opp. Park Street Church

BOSTON

HARVEY S. CHASE & CO.

Certified Public Accountants and Auditors

RECENT EXAMINATIONS:

City of Boston, City of Chicago, State of Ohio, City
of Minneapolis, Boston Gas Companies,
Manufacturing Companies, Savings Banks, Trust
Companies, etc.

84 STATE ST., BOSTON :: Telephone 3660 Main

Leonard Metcalf, '92 :: Harrison P. Eddy

METCALF & EDDY

Members Am. Soc. C. E.

CONSULTING CIVIL ENGINEERS

14 Beacon Street, Boston, Mass.

Harris Trust Building, Chicago, Ill.

Water Supply, Sewerage, and other Engineering Works

GEO. H. BARRUS, '74

Expert and Consulting Steam Engineer

PEMBERTON BUILDING

12 Pemberton Square :: Boston

WILLIAM S. JOHNSON, '89

Sanitary and Hydraulic

Engineer

101 Tremont Street :: BOSTON

G E O. H. ELLIS C O., Printers

N O. 272 CONGRESS STREET, BOSTON, MASSACHUSETTS

ILLUSTRATING, PRINTING, AND BINDING OF MAGAZINES, BOOKS, CATALOGUES, PAMPHLETS, ALSO JOB PRINTING, LAW, RAILROAD, AND MERCANTILE WORK ☀ ☀ Telephone, 1549 Main

THOMAS TODD, JR., '99

Telephone, 601 Haymarket

Established 1864

THOMAS TODD CO. PRINTERS

14 Beacon Street

Boston, Mass.

“MORSE”

TWIST DRILLS, REAMERS, MILLING CUTTERS, TAPS, DIES, ETC.



The correct Tools for modern, up-to-date work. Illustrated Catalogue, free.

Morse Twist Drill & Machine Co.
NEW BEDFORD MASS., U. S. A.

THE ATLANTIC WORKS

INCORPORATED 1853

BORDER, MAVERICK AND NEW STREETS, EAST BOSTON
BUILDERS OF

Stationary... **BOILERS** and Marine
Plate and Sheet Iron Work of Every Description

**STEAMSHIPS, TOWBOATS, STEAM YACHTS
AND HEAVY MACHINERY**

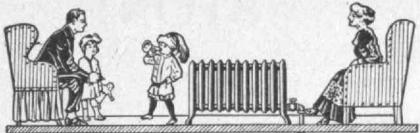
RUMFORD PRESS

CONCORD, N. H.



BOOK AND
COMMERCIAL
PRINTING

COLLEGE
PRINTING
A SPECIALTY



How to Install A Bathroom and A Heating System

Save all cost of skilled labor. Save on all material. Save money on all improvements. Post yourself on the new practical Gibbons method. Every detail explained in my new big book. Every home, even the smallest cottage can now have modern heating plant and running water. My book explains how you can easily afford these improvements and luxuries. Send for this valuable book and get it post-paid, free.

Gibbons New Method My great book tells you how to install a modern heating plant or your own water system. New money-saving method. Steam or hot water heating plants. Complete plans and instruction furnished to you free. Churches, halls and schools can have these improvements at a low cost. My free book explains all. Send for it today.

Save On All Material My method for saving on all material is a revelation even to the most experienced contractors and builders. You get the best material for all improvements, everything guaranteed at direct, money-saving prices. Get my free book and see for yourself. My amazing low prices will prove to you my method is a blessing to every builder and home owner. This is your chance to make your property more valuable, and your home more comfortable and save money. Send for my book today. It is post-paid, free to you.

Book Free

My new book gives you greater buying power than your local dealer. It is the most valuable catalog ever issued. Thousands of things illustrated and priced. Hot water and steam heating plants, gasoline engines, hydraulic rams, pipes, pumps, electric lighting plants, acetylene lighting plants, all accessories. Everything guaranteed the highest quality at direct, bed-rock bottom prices.

Send Coupon

Fill out coupon and mail it today. Or copy it on post-card or letter and send it without delay. Home owners, contractors, builders need my wonderful book. Fill out and send coupon and you will get my book post-paid, free. Write today.

M. J. GIBBONS

Dept.

Dayton,

Ohio

FREE BOOK COUPON

M. J. GIBBONS

Dept.

Dayton, Ohio

Dear Sir—Please send me copy of your new book explaining how to install modern plumbing, heating and lighting systems. Also your bed-rock bottom prices on material. Send all post-paid, free to me.

Name

Address

STONE & WEBSTER

CHARLES A. STONE, '88

EDWIN S. WEBSTER, '88

RUSSELL ROBB, '88

HENRY G. BRADLEE, '91

ELIOT WADSWORTH

DWIGHT P. ROBINSON, '92

JOHN W. HALLOWELL

Securities of Public Service Corporations

Stone & Webster Engineering Corporation

(INCORPORATED)

CONSTRUCTING ENGINEERS

DWIGHT P. ROBINSON, '92	President and General Manager
HOWARD L. ROGERS, '93	First Vice-President and Treasurer
GEORGE O. MUHLFELD	Vice-President and Construction Manager
FREDERIC N. BUSHNELL	Vice-President and Engineering Manager
GEORGE C. ENGLAND	Controller
ROBERT E. HAMILTON	General Purchasing Agent

Stone & Webster Management Association

(INCORPORATED)

GENERAL MANAGERS OF PUBLIC SERVICE CORPORATIONS

HENRY G. BRADLEE, '91	President
FREDERICK S. PRATT	Vice-President
FREDERICK P. ROYCE, '90	Vice-President
CHARLES F. WALLACE, '92	Vice-President
HENRY B. SAWYER	Treasurer

GENERAL MANAGERS OF

The Lowell Electric Light Corporation.
The Seattle Electric Company.
Puget Sound Electric Railway Company.
Tacoma Railway and Power Company.
Columbus Electric Company.
Cape Breton Electric Company, Ltd.
El Paso Electric Company.
Jacksonville Traction Company.
Ponce Electric Company.
Paducah Traction and Light Company.
Puget Sound International Railway & Power Company.
Edison Electric Illuminating Company of Brockton.
Houghton County Electric Light Company.
Brockton and Plymouth Street Railway Company.
Houghton County Traction Company.
Savannah Electric Company.
Pacific Northwest Traction Company.
Eastern Texas Electric Company.
Fort Worth Southern Traction Company.
Dallas Electric Corporation.

Northern Texas Electric Company.
The Electric Light and Power Company of Abington and Rockland.
Blackstone Valley Gas & Electric Company.
The Blue Hill Street Railway Company.
Tampa Electric Company.
Pensacola Electric Company.
Houston Electric Company.
Fall River Gas Works Company.
Galveston Electric Company.
Pacific Coast Power Company.
The Key West Electric Company.
Baton Rouge Electric Company.
Whatcom County Railway & Light Company.
Galveston-Houston Electric Company.
Haverhill Gas Light Company.
Sierra Pacific Electric Company.
Mississippi River Power Company.
Puget Sound Traction, Light & Power Company.

STONE & WEBSTER BUILDING

147 MILK STREET, BOSTON, MASSACHUSETTS

5 NASSAU STREET, NEW YORK
FIRST NATIONAL BANK BLDG., CHICAGO, ILL.



TRADE MARK.
REGISTERED.

NEW ENGLAND FELT ROOFING WORKS

101 MILK STREET, BOSTON. TEL. 1496 MAIN

ESTABLISHED 1852

INCORPORATED 1891

"BEEHIVE" BRAND FELT ROOFING AND WATERPROOFING MATERIALS

¶ The Standard Specification in New England for 60 years. Quality, Quantity and skilled application has given gravel roofing its present reputation with architects and property owners. More than 400,000,000 square feet now in use. Insured in all leading insurance companies in the United States and abroad at same rate as Metal and Slate. Our testimonials cover roofs 35 years old still in good condition.

¶ STANDARD SPECIFICATION:

- | | | |
|---|---|---|
| 1 | 1st. One layer "Beehive" Brand Rosin Sized Dry Paper. | 1 |
| | 2d. Three layers "Beehive" Brand Roofing Felt. | |
| | 3d. Mopping "Beehive" Brand Roofing Composition (of not less than three gallons per square 10 x 10). | |
| 2 | 4th. One layer "Beehive" Brand Roofing Felt. | 2 |
| | 5th. Mopping "Beehive" Brand Roofing Composition (of not less than three gallons per square 10 x 10). | |
| 3 | 6th. One layer "Beehive" Brand Roofing Felt. | 3 |
| | 7th. Pouring "Beehive" Brand Roofing Composition (8 gallons to square 10 x 10, into which is to be bedded clean, dry gravel or slag). | |

NOTE.—In writing specification, it is advisable to write *in full*,
"Beehive Brand" Roofing Material, Manufactured
by the New England Felt Roofing Works.

¶ Three Section Roofing Specification.

Each Section complete in itself.

Open work, easy inspection and detection of oversights in application.

*Cambridge Subway all waterproofed with "Beehive" Materials.
Boston " " " " Felt.*

Felt Manufactured by the

MUNROE FELT & PAPER CO., Lawrence.

JAMES P. MUNROE, '82, Pres. and Treas.

FINE INKS & ADHESIVES

For those who KNOW



HIGGINS'

Drawing Inks
Eternal Writing Ink
Engrossing Ink
Taurine Mucilage
Photo Mounter Paste
Drawing Board Paste
Liquid Paste
Office Paste
Vegetable Glue, etc.

Are the Finest and Best Inks and Adhesives

Emancipate yourself from the use of corrosive and ill-smelling inks and adhesives and adopt the Higgins' Inks and Adhesives. They will be a revelation to you, they are so sweet, clean, well put up, and withal so efficient.

At Dealers Generally

CHAS. M. HIGGINS & CO., Mfrs.
271 Ninth Street Brooklyn, N.Y.
Branches: Chicago, London.

M. I. T. SOUVENIRS

FELT FLAGS

\$1.25

\$1.25

\$1.00

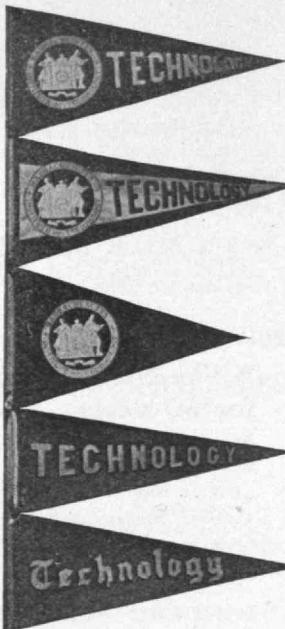
\$0.75

\$0.75

\$0.75, Silk T. Flags.

\$0.50 Felt T. Flags.

A. D. MacLachlan 502-504 Boylston Street Boston



Banners
for Dens

Bronze
Seals

Silver
and
Gold Pins

T
Buttons

Steins

Fobs

Pillows

Song
Books

Distinctive Lubricating Qualities

are possessed by Dixon's Flake Graphite that no other lubricant shares. It perfectly resists heat and cold, acids and alkalies. It goes direct to friction's cause, microscopic roughness of metal surfaces, and supplies a smooth, durable, veneer-like coating that reduces friction and wear, prevents cutting and seizing. Write for "Graphite as a Lubricant."

—Sent free.

Joseph Dixon Crucible Co., Jersey City, N. J.

THE TECHNOLOGY ARCHITECTURAL RECORD

DEVOTED TO

THE STUDY OF ARCHITECTURE AND TO THE WELFARE OF
THE DEPARTMENT OF ARCHITECTURE OF THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Published Quarterly by the M. I. T. Architectural Society

Subscription rate, One Dollar per Volume

DAVIS FOUNDRY COMPANY

LAWRENCE, MASS.

JAMES F. LANIGAN, Proprietor

Structural Iron Work of all descriptions

Machinery and Architectural Casting

JAMES F. LANIGAN, JR., '94, Agent

Drainage and Ventilation

Gas Fitting

JOHN F. DONLAN SANITARY PLUMBER

488 BOYLSTON STREET, BOSTON

Telephone, 535 Back Bay
Residence, 547-2 J. P.

Estimates Furnished

Repairing Promptly Attended to

MERRIMAC CHEMICAL CO. 33 BROAD STREET - - - - BOSTON, MASS.

MANUFACTURERS OF

Oil Vitriol
Muriatic Acid
Nitric Acid
Acetic Acid
Acetate of Soda
Alum

Sulphate of Alumina
Chloride of Alumina
Hydrate of Aluminum
Acetate of Alumina
Glauber's Salt
Sulphate of Soda

Bisulphite of Soda
Hyposulphite of Soda
Tin Crystals, etc.
Aqua Ammonia
Wood Alcohol
Colors

S. W. WILDER, President and Treasurer

HENRY HOWARD, Vice-President



SANITAS MANUFACTURING CO.

MANUFACTURERS OF

FINE PLUMBING FIXTURES

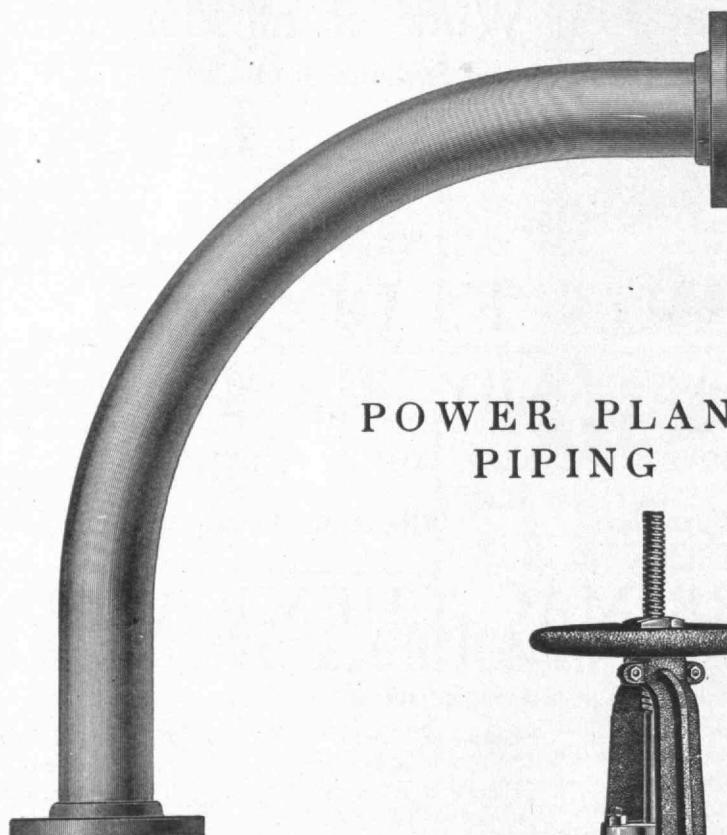
52-54 UNION ST..
BOSTON

WORKS AT
WAKEFIELD, MASS.

38-40 WEST 32nd ST.
NEW YORK

WALLACE C. BRACKETT, '95, GEN. MGR.

**WALWORTH
MANUFACTURING COMPANY**
BOSTON, U. S. A.

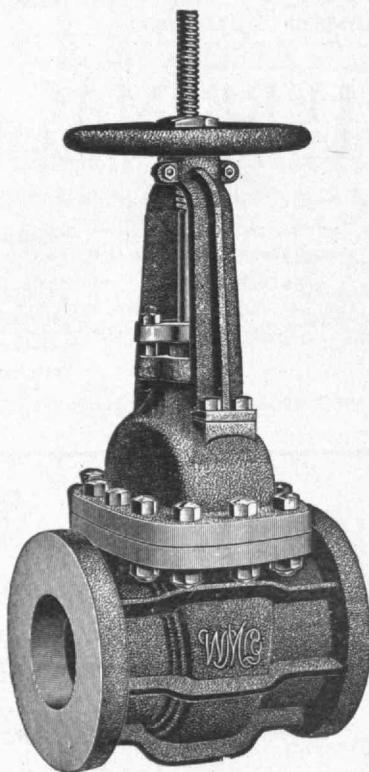


**POWER PLANT
PIPING**

Extra Heavy
Valves and Fitting for
High Pressure Plants

Walmanco
Pipe Joints

GENERAL OFFICES
132 Federal Street



Manning, Maxwell & Moore, Inc.

Machine Tools Shaw Electric Traveling Cranes Supplies
Engineering Specialties of All Kinds

45 Oliver Street, BOSTON.

85-87-89 Liberty Street, NEW YORK

BRANCHES:

Chicago

Pittsburgh
Buffalo

Philadelphia

Milwaukee
Cleveland
Yokohama, Japan

San Francisco
St. Louis

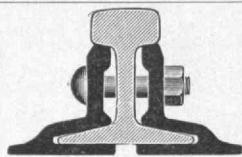
Detroit

Boston

FACTORIES:

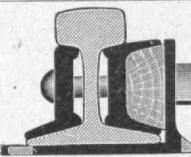
Bridgeport

Muskegon



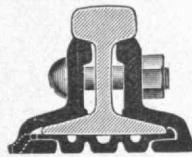
Continuous Joint

Over
50,000
miles
in use



Weber Joint

Rolled
from
Best
Quality
Steel



Wolhaupper Joint

The Rail Joint Company

General Offices: 185 Madison Ave., New York City

Makers of Base Supported Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulated Rail Joints, protected by Patents.

CATALOG AT AGENCIES

Boston, Mass. Pittsburgh, Pa.
Chicago, Ill. Portland, Ore.
Denver, Colo. St. Louis, Mo.
Troy, N. Y.

London, E. C., Eng. Montreal, Canada.

HIGHEST AWARDS—Paris, 1900; Buffalo,
1901; St. Louis, 1904.

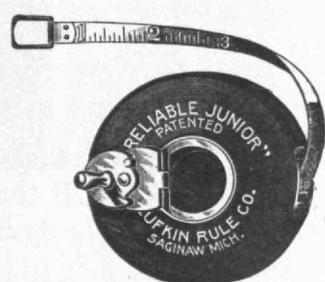
Accuracy in Measurements
is Best Obtained Through the Use of

LUFKIN MEASURING TAPES

The more severe the test, the better their showing. Sold by
all dealers. Catalog sent on request

THE LUFKIN RULE CO.
SAGINAW, MICH., U.S.A.

New York
London, Eng.
Windsor, Can.



Trade Mark Reg. U. S. Pat. Off.

Samson Solid Braided Cord

All Kinds, Sizes and Colors
Cotton, Linen, Italian Hemp

Samson Spot Cord. Extra quality guaranteed. We are glad to send samples
and full information.

Samson Cordage Works, Boston, Mass.

James P. Tolman, '68, President
Herbert G. Pratt, '85, Treasurer

Trade Mark Reg. U. S. Pat. Off.

ELDRIDGE FRONT-DRIVE ELECTRIC TRUCKS



MOTOR IN THE FRONT WHEELS

2 to 5 Tons Capacity

While not as yet generally known—

IT IS A FACT that these are the only motor trucks made that can lower the cost of horse hauling, over the average city routes, sufficiently to justify the extra investment in the motor trucks. Other motor trucks do not pay except upon out-of-town hauls.

Please submit your hauling problems.

\$150,000 worth of these trucks running here-abouts.

ELDRIDGE MFG. CO.

178 Devonshire Street, Boston

Technology

GRADUATES
AND STUDENTS

Are invited to inspect the latest series of **FIAT Motor Cars.** Your schooling while at the Institute places you in a position to appreciate design and up-to-date engineering methods.

The **FIAT** is the best designed car in the world and has been acknowledged and accepted by the Society of Automobile Engineers as such. F. I. A. T. design and features are being copied by all the leading manufacturers of American cars: more each year.

Our monobloc motor contains all cars from our 20 H. P. adopted by other builders simplicity, and its rigid-balanced motor, also elimi-



nating many moving parts. struction, which we use on to our 200 H. P. will be on account of its extreme ness, which gives a better nating many moving parts.

We have on exhibition a full line of monobloc motors, ranging from 20 H. P. to 55 H. P. For further particulars we ask you to call or write.

FIAT MOTOR SALES COMPANY
839 Boylston Street - - - BOSTON, MASS.

SIMPLEX

INSULATED

WIRES & CABLES

RUBBER—VARNISHED CAMBRIC

Everett Morss, '85

Henry A. Morss, '93

THE :SIMPLEX:ELECTRICAL:CO

..... 201 DEVONSHIRE ST BOSTON

ARTHUR D. LITTLE, Inc.

Laboratory of Engineering Chemistry

93 Broad Street,



Boston

A. D. LITTLE, '85, President

H. J. SKINNER, '99, Vice-President

H. S. MORK, '99, Treasurer

C. F. WOODS, Secretary

The purpose of this organization of **CHEMISTS** and
ENGINEERS is that of securing to its clients
INCREASED INDUSTRIAL EFFICIENCY in
material and processes :: :: :: :: ::

In addition to its general service covering Inspection, Analyses, Physical and Electrical Tests, and Technical Reports, the laboratory is prepared, through its large staff of specialists, to undertake any work involving the application of chemistry to industry.

WEBSTER HEATING

- ¶ For securing positive exhaust steam circulation in a large building or from a central plant the Webster Vacuum System should be used.
- ¶ For the smaller and medium size buildings, residences, etc., the Webster Modulation System is recommended.
- ¶ The Modulation Valve, by means of which ready control of the amount of heat emitted by each radiator is secured, is equally applicable to either Webster System.
- ¶ Almost any two-pipe system may be altered to a Webster System with marked increase in comfort and economy.
- ¶ Over 100 buildings in Boston alone are successfully heated by Webster Systems.

Warren Webster & Company

AIR WASHERS

STEAM SPECIALTIES

CAMDEN, N. J.

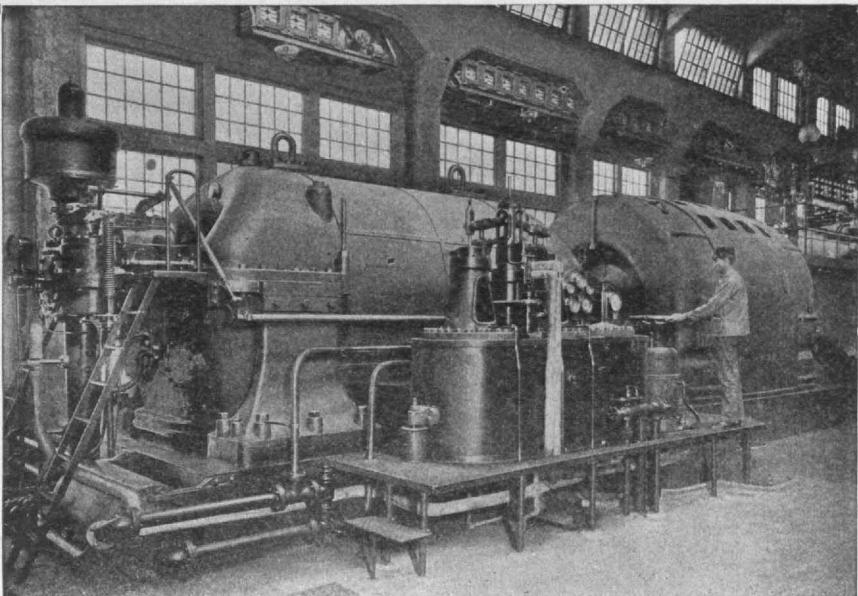
OFFICES IN ALL PRINCIPAL CITIES

New England Manager, WILLIAM G. SNOW, 24 Milk Street, Boston

Established 1888

Over 6000 Installations

26-2



This 10,000 Kw. normal rated turbo-generator unit has a Rankine Cycle Efficiency of 68.9 % overall, which is the American Record.

The Westinghouse Machine Co., **East Pittsburgh, Pa.**
PRIME MOVERS AND AUXILIARIES



OTHER TECH MEN

who hold responsible positions as purchasing agents for large companies always buy

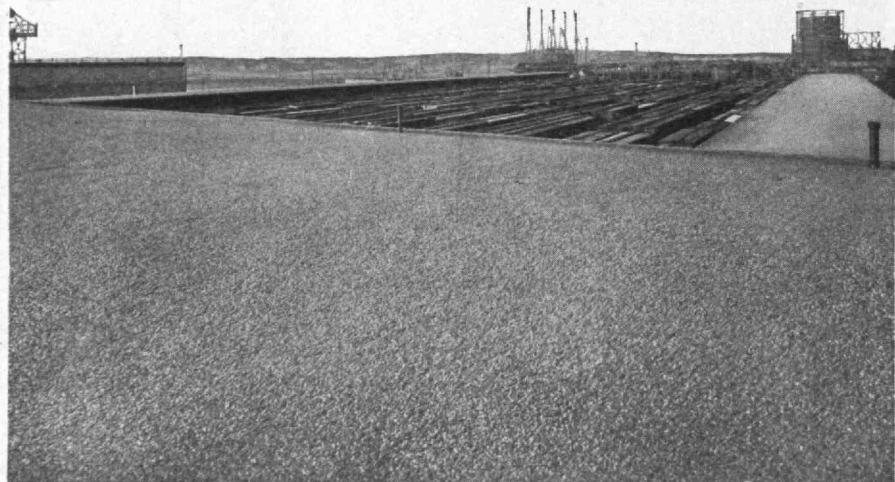
Starrett
Tools

for the men in their shops. They know by experience that the accuracy of these tools insures perfect work, while their excellence of design increases the efficiency of the men. When you need fine mechanical tools for yourself or for your plant consult the Starrett Catalog No. 19.

The L. S. Starrett Co.
ATHOL, MASS.

42-123

Barrett Specification Roofs



The Most Popular Roof in the World

THE illustration above shows the familiar gravel surface of a Barrett Specification Roof.

Roofs of this type are used with the fullest satisfaction on thousands of great factories and commercial establishments all over the United States.

The Barrett Specification is the standard method for constructing these roofs.

It specifies the kind of felt and pitch that should be used, the quantity required and it further defines the correct method of applying same. It also specifies a simple and practical method of inspection and provides for the identifying of the pitch and felt.

If this specification is carefully followed, the owner of the building is assured of a roof that will usually last twenty years or more without any maintenance expense whatever.

We shall be pleased to mail architects, engineers or owners of buildings, copies of The Barrett Specification with diagrams from which blue prints can be made. Address nearest office.

Special Note

We advise incorporating in plans the full wording of The Barrett Specification, in order to avoid any misunderstanding.

If any abbreviated form is desired however, the following is suggested:

ROOFING—Shall be a Barrett Specification Roof laid as directed in printed Specification, revised August 15, 1911, using the materials specified, and subject to the inspection requirement.



BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland Pittsburgh Cincinnati
Kansas City Minneapolis Seattle Corey, Ala.

THE PATERSON MFG. CO., Ltd.—Montreal, Toronto, Winnipeg, Vancouver, St. John, N. B., Halifax, N. S.

NORTHROP LOOMS

solve the labor problem,
make an easier job for the weaver
and earn larger dividends
for the mill.

DRAPER COMPANY

Hopedale, Mass.

J. D. CLOUDMAN, Southern Agent

40 So. Forsyth St., ATLANTA, GA.

OLD COLONY TRUST COMPANY

BOSTON, MASS.

Main Office, Court Street

Branch Office, Temple Place

CAPITAL	\$6,000,000
SURPLUS	\$8,000,000

An account with the OLD COLONY TRUST COMPANY commands the services of two centrally located banking offices, one in the heart of the shopping district, the other in the center of the financial district.

OFFICERS

GORDON ABBOTT, Chairman Board of Directors

FRANCIS R. HART, Vice-Chairman Board of Directors

PHILIP STOCKTON, President

WALLACE B. DONHAM, Vice-President

JULIUS R. WAKEFIELD, Vice-President

E. ELMER FOYE, Vice-President

CHESTER B. HUMPHREY, Vice-President

JOSEPH G. STEARNS, Vice-President

FREDERIC G. POUSLAND, Treasurer

GEORGE W. GRANT, Cashier

S. PARKMAN SHAW, Jr., Secretary

F. M. HOLMES, Trust Officer

F. M. LAMSON, Manager Temple Place Branch